Health Implications of Contaminants in Fish

Ontario

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Introduction

Since the 1960s when DDT was discovered in fish, Ontario has developed an extensive contaminant monitoring program and has made many advances in identifying contaminants in the aquatic environment. Various agencies have undertaken studies to determine the source, magnitude and health impact of the contaminants. Where controllable sources have been identified, steps have been taken to reduce or eliminate the discharge of these substances.

Part One of this report identifies the contaminants, their source, control, monitoring and effects on fish. Part Two details the effects of contaminants on human health, Part Three includes recommendations for consumption of fish containing contaminants. Part Four outlines contaminant levels in fish, and Part Five consists of tables outlining allowable fish consumption by species and water body.

Not all lakes in Ontario are included and not all species of fish are covered in those lakes surveyed. It is intended to expand this information base in the future by including data from the International Joint Commission Upper Great Lakes Reference Program, Environment Canada Fisheries and Marine Service inspection programs, ongoing Ontario monitoring programs and from other agencies.

This report is a first attempt to provide comprehensive guidelines for people wanting to eat the fish they catch by giving them the necessary information on which to base their own judgment.

The information pertaining to conditions of fish in specific monitored lakes is the latest available up to and including May, 1977.

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Part I
Mercury and other contaminants in fish

Mercury

Mercury is a naturally occurring heavy metal, found in most soils and rocks generally in minute concentrations as mercuric salts. There are, however, numerous locations throughout Ontario where concentrations of mercury attributed to natural sources are high enough to be measured in fish, animals, plants and water.

Mercury is used or in the past has been used, in many industrial processes such as:

- chlorine production (chlor-alkali plants)
- manufacture of electrical equipment (batteries and switches)
- mining (gold and silver)
- agriculture (seed dressing and root dip)
- pulp and paper (slimicides)
- manufacturing of scientific instruments (thermometers, barometers)
- dental and pharmaceutical applications
- mildew proofing in paints and coatings

Sources and controls

Naturally-occurring mercury
Traces of mercury are found in most of Ontario's bedrock. In areas where lead, silver, copper and other metals are present, mercury is almost always found. These natural mercury deposits most likely account for the mercury levels reported in fish from many parts of Ontario remote from industrial activities.

The level of mercury in soils is normally 20 to 150 parts per billion (*ppb) with a mean value of 70 ppb.

Background levels of mercury in lake and stream sediments normally range from 10 to 700 ppb. In areas where mercury is present due to mineral deposits or industrial pollution, mercury levels in soils and sediments can greatly exceed 1,000 ppb. Fish taken from lakes with normal sediment background levels can have fish with mercury concentration between 0.1 and 1.5 *ppm.

Chlor-alkali plants
Mercury is often used in the electrolytic preparation of chlorine and caustic soda. Chlor-alkali plants using the mercury process have tended to lose large amounts of mercury to the environment.

In 1970, there were six mercury cell chlor-alkali plants in Ontario, and all were ordered by the Ontario Government to curtail their mercury losses. All plants agreed to comply.

Although in some instances occasional losses occurred, mercury discharges dropped from several pounds per day to a few ounces. Today there are two mercury cell chlor-alkali plants operating in Ontario and by 1978 there will be one. They are checked regularly to ensure that they meet federal guidelines on mercury discharges to water.

*ppb = nanograms per gram
ppm = micrograms per gram

Pulp and Paper
Compounds containing mercury (eg. phenyl mercuric acetate) were used as slimicides at many pulp and paper plants to stop the growth of fungi which could foul paper making equipment and sewer lines. Many mills making paper products for use in the food industry stopped using mercurial slimicides in the 1960's and the remaining mills, primarily newsprint producers, switched to other slimicides after being ordered to do so by the Ontario Government in 1970.

Mining
Mining for metals such as lead, silver, or copper usually results in some build-up of mercury in tailings areas due to the close association between mercury and other metals. In the vicinity of tailings areas it is not unusual to find elevated mercury levels in sediment and fish.

Some mining operations at one time used mercury for the separation of gold and silver from ore. Ore was crushed and mixed with mercury, which amalgamated the gold and silver. By heating the resulting mixture, mercury was driven off, leaving behind a mixture of gold and silver.

Operations such as these resulted in losses of mercury to the atmosphere, soil and water. Such mining activities have now been generally eliminated and replaced by separation techniques resulting in no mercury losses.

Agriculture
Mercurial fungicides are used on a limited basis for seed-dressing, root dip and for treating golf greens and are not considered a major source of mercury in Ontario. Today their use in agriculture is closely controlled.

Sewage treatment plants
Industries may use mercury compounds and discharge small quantities to the municipal sewage systems. Sewage sludge from heavily populated areas can contain levels of mercury ranging from five to 25 parts per million. This sludge can cause a build-up in soil if used as a soil conditioner for prolonged periods of time. Low concentrations of mercury may also be discharged to the aquatic environment with the treated sewage effluent. Government guidelines limit the use of sludge containing metals such as mercury.

Atmospheric fallout
Mercury has the highest vapor pressure of all the metals and is therefore present everywhere in the earth's atmosphere. The concentration of mercury in air is normally extremely low (about 0.5 to two nanograms per cubic metre). Mercury can enter the atmosphere by several means:

- evaporation from seas and lakes,
- evaporation from natural mercury deposits in mineralized areas,
- degassing of mercury from the earth's crust,
- chlor-alkali plants,
- roasting of metal ores in smelters,
- burning coal, oil and other fossil fuels,
- miscellaneous industrial activities.

Monitoring of mercury

Since mercury was found in fish and sediments in Lake St. Clair in 1969, extensive monitoring of water, sediment, soils and fish has been carried out. These surveys covered all major industrial sources first, with the St. Clair area and the Wabigoon-English river system of northwestern Ontario receiving priority.

Methods were developed for analysing mercury at very low concentrations in all types of environmental samples. Fish, water, sediments and soils are being analysed from areas where elevated mercury levels are suspected. Industrial waste samples are being taken around the province in an attempt to assess the extent of mercury distribution. Mining sites, chlor-alkali plants and areas of high mineral deposits are given priority.

In the mid-1970s, the monitoring program was expanded to provide information on the level of mercury in fish from lakes far removed from industrial activity.

In Ontario, fish caught commercially for sale are subject to inspection by the Fishing and Industry Services, Canada Department of Fisheries and the Environment. Those fish exceeding Federal guidelines for mercury or other contaminants are detained. Waters in which certain species of commercial size are known to exceed the guidelines are generally closed to commercial fishing for those species under the Ontario Fishery Regulations.

Uptake of mercury by fish

Most of the inputs of mercury into the environment consist of inorganic mercury. However, the mercury found in fish flesh is virtually all methylmercury. The inorganic mercury in the environment is transformed into methylmercury by micro-organisms living in sediments. Once the mercury is converted to methylmercury, it is rapidly absorbed by fish directly from the water or via the food chain (order of predation in which organisms in an ecological community use the next lower member as a food source). Methylmercury is incorporated into the protein of the fish and is found in the liver, kidney and flesh.

Because fish absorb mercury rapidly and excrete it extremely slowly, mercury gradually accumulates in the fish. If enough mercury is available, either from natural sources or industrial pollution, and conditions favor methylation of mercury, fish populations can easily have mercury concentrations high enough to warrant restricted consumption. Predatory fish such as walleye, lake trout or pike are the most likely species to have elevated mercury levels since they eat mercury-contaminated fish.

Polychlorinated biphenyls (PCB)

Polychlorinated biphenyls commonly known as PCB are a group of stable organic chlorinated hydrocarbons originally developed in the 1920s. Since their properties included low flammability, high chemical and thermal stability, PCB were soon used extensively in industrial and commercial applications.

Sources and controls

Unlike mercury, PCB are synthetically manufactured substances, present in the natural environment solely as the result of man's activity.

Industrial uses

Until 1972 PCB were widely used as hydraulic fluids, ingredients in oils and greases, fire retardants and plasticizers in caulking compounds, adhesives, paints, printing inks and many other products.

Because of the wide use and lack of recognition of PCB as hazardous substances for 40 years, losses to the aquatic and terrestrial environment did result through inadvertent industrial spills or discharges to municipal sewage systems. Stack emissions carried PCB to the atmosphere and later back to earth. Industrial and domestic garbage disposal, subsequent leaching from solid waste disposal areas, industrial spills, atmospheric losses and discharges to sewage treatment systems all contributed to the widespread introduction of PCB to the aquatic environment prior to 1972.

Electrical power uses

Because of their excellent fire retardant and insulating properties, PCB have been widely used as transformer and capacitor fluids. Until about 1970 no particular precautions were taken with the disposal of waste PCB. When it was recognized that they posed a potential environmental hazard, programs were initiated to control the disposal of waste PCB and contaminated equipment. Much of the electrical equipment containing PCB is now labelled as such and inventories are maintained.

Since 1972 the sole North American manufacturer of PCB has voluntarily restricted all sales of these materials to electrical applications in sealed vessels. Waste PCB are now disposed of by special high temperature incineration which destroys the compound, or by storage in specially controlled areas.

PCB are no longer sold for purposes where their use could lead to losses to the natural environment. Contaminant levels measured today are the result of lack of knowledge and poor management practices of past decades.

Monitoring PCB

Great Lakes basin

Ontario has carried out extensive monitoring of water, sediments and fish in the Great Lakes Basin since 1970. Major programs include the International Joint Commission program involving the sampling of Upper Lakes water, sediment and fish during 1973 and 1974, Ontario's fish sampling program ongoing since 1974 and inspection by the federal government of fish offered for sale.

Inland waters

Studies of PCB levels in selected inland lakes and water courses have been ongoing since 1970. As well as regional sampling programs, the program of the International Joint Commission Pollution From Land Use Activities Reference Group (PLUARG) has contributed significant data on PCB levels in rivers in southern Ontario.

Sewage treatment plants

PCB loadings derived from municipal sewage treatment plants are routinely determined by analysis of effluents and sewage sludges. This work also helps in evaluating the efficiency of PCB removal achieved in sewage plants.

Industrial and other sources

Regional projects are aimed at evaluating and controlling PCB discharges from industrial sources, landfill leachates, incinerators, accidental spills and discharges.

Mirex (Dechlorane)

Mirex is a highly chlorinated carbon compound developed in the 1950s and used chiefly in the southeastern U.S. as a pesticide to control the fire ant. Mirex has never been registered as a pesticide for use in Ontario.

Because of its chemical stability, mirex also proved to be an excellent fire retardant material and was marketed commercially as Dechlorane. Its use in Ontario as a fire retardant was limited to two manufacturers in southern Ontario whose products were molded plastic TV set components and body-panel sealants for the automotive industry.

Sources and controls

Industrial uses

Contamination of sediments and several species of fish in some areas of Lake Ontario was discovered in 1975. While no mirex was known to have been used as a pesticide in the Lake Ontario basin, investigations by U.S. agencies identified a processor of mirex in Niagara Falls, N.Y., as the major source of the contaminant in Lake Ontario. Another potential industrial source was identified in the Oswego area of New York state in the eastern Lake Ontario basin. Direct discharges from U.S. sources have been terminated. However, losses from drainage systems in New York state which have been saturated with mirex through past uses are still resulting in some discharges to the lake.

In Ontario, two industrial users of mirex have been identified. Mirex was never manufactured in Canada but was imported from the U.S. Use of mirex by Ontario manufacturers was terminated in 1970.

Extensive sampling in the vicinity of the two Ontario users, in the Credit River and Grand River basins, has identified mirex in some samples collected in soils around the plant properties and solid waste disposal areas, but none in water, sediment or fish from the adjacent rivers.

Monitoring of mirex

Since December, 1975, all samples of water, sediments and fish analysed for organochlorine pesticides and PCB have been examined for mirex. Significant mirex residues have been detected only in fish from Lake Ontario and the St. Lawrence and Niagara Rivers, and sediments from southern Lake Ontario. This is consistent with known major sources (New York state).

DDT

DDT was developed during the Second World War to control disease-carrying insects such as mosquitoes and lice. After the war, DDT quickly gained wide acceptance and use as a valuable insecticide for agricultural and public health use. Its high toxicity to insects and long-term persistence coupled with its world-wide and often indiscriminate use has resulted in the build-up of DDT in fish and wildlife. This caused various problems such as reduced success in reproduction.

In 1966 Ontario began restricting use of DDT. By 1969, use was further controlled under the Pesticides Control Act to a few specific purposes under special permits only.

Even though controls have been in place for a decade, DDT, because of its long-term persistence, can still be found in sediments, fish and wildlife in some parts of Ontario, although levels appear to be declining.

Ontario has conducted monitoring programs for DDT since 1967. A large number of samples (water, sediment, fish) have been analysed. Fish collected for the PCB monitoring program were also tested for DDT. The Muskoka Lakes were one of the most heavily treated areas for black fly and mosquito control. Southwestern Ontario received the highest applications for agricultural purposes. With the discontinuation of DDT use in the late 1960s, environmental levels have started to decline. Concentration trends will continue to be assessed by ongoing monitoring programs.

Uptake of organic compounds by fish

Organochlorine compounds (PCB, mirex, DDT) generally have a low solubility in water. These substances are generally associated with suspended particulate matter or organic bottom material. Fish which are bottom feeders take up the contaminants from the bed sediments and invertebrates. Predators ingest the substances when they eat smaller fish. Some of the trace organic compounds are also taken up through the gills.

As with mercury, fish cannot readily get rid of these organic compounds and as a result, they can accumulate to levels that make the fish unsuitable for human consumption.

Mirex and PCB tend to accumulate in the fatty tissues and therefore highest concentrations are found in "fatty" predators such as coho salmon and rainbow trout as well as whitefish and smelt.

PART II
Effects of contaminants on human health

Mercury

History

Metallic mercury has been known to be potentially hazardous to human health for many centuries. The much higher toxicity of methylmercury was recognized only at the turn of the 20th century when several deaths occurred from exposure in research laboratories investigating its properties.

Commercial use of organic mercury compounds in the form of seed dressings began during the First World War. Many years later, the consumption of dressed seed led to a number of outbreaks of methylmercury poisoning (Guatemala, 1966; Iraq, 1956, 1960, 1971-72; Pakistan, 1969).

Fish contaminated by methylmercury were the cause of an epidemic of poisoning in Minamata, Japan. The source of methylmercury in this case was waste water discharged into Minamata Bay from a chemical plant. This discharge was extremely hazardous because it contained mercury already transformed by the plant process from the inorganic form into methylmercury.

Monitoring of industrial discharges in Ontario indicates that mercury is in the inorganic form. Studies carried out in both Japan and Sweden indicate that inorganic mercury can be methylated through bacterial action in freshwater sediments.

About 90 people died in Minamata up to October, 1975 as a result of methylmercury poisoning and many more suffered severe irreparable health effects. A similar outbreak in Niigata, northeast of Minamata, caused another 25 deaths.

The epidemic of methylmercury poisoning in Iraq, in 1971-72 was probably one of the most serious outbreaks of chemical poisoning ever recorded. Several thousand people died and many more became ill from methylmercury poisoning.

Clinical effects of methylmercury poisoning

In neither the Iraqi nor Japanese outbreaks were any signs or symptoms of methylmercury poisoning found in individuals with mercury levels in blood of less than 200 nanograms per millilitre (ng/ml), which corresponds to a body burden of about 20 milligrams. At blood levels higher than 3,000 ng/ml, the majority of patients died. The central nervous system is most affected by methylmercury and the dominant manifestations of poisoning are disturbances of co-ordination and sensory functions.

Cerebellar disturbance
This disturbance is manifested by ataxia, lack of co-ordination and dysarthria.

Sensory disturbances
These usually have a "glove and stocking" distribution. The complaints include a feeling of "pins and needles," inability to feel objects properly and numbness of the lips and mouth. The signs include impairment of two-point discrimination, impairment of stereognosis and sense of position (Romberg's sign).

Visual disturbances
These include constriction of the visual fields, night blindness and varying degrees of diminution of visual acuity. Constriction of the visual fields is considered a common sign of methylmercury poisoning.

Motor involvement
In the Iraqi experience motor involvement occurred in less than 50 per cent of cases. The diagnosis was made on the basis of the characteristic signs of pyramidal tract weakness and by extensor plantar responses rather than on the basis of muscle tone or tendon reflex changes.

Extrapyramidal involvement and tremor
Involuntary movements were seen in some of the Iraqi patients. Intention tremor was seen more frequently than static tremor.

Deafness
Deafness occurred in some patients but was usually not complete.

Taste and smell
Diminished taste and smell were also reported.

Prognosis in survivors
In the Iraqi experience recovery in severe cases of methylmercury poisoning was never complete. In the acute cases some moderate improvement occurred during the first few months following onset of the disease. Little improvement occurred later.

Fetal poisoning
Severe cases of fetal methylmercury poisoning have occurred in Japan and Iraq. These cases are clinically indistinguishable from cases of congenital cerebral deficit from some other cause. Epidemiological evidence, as well as known levels of methylmercury in the blood of the mother and/or cord blood and mercury levels in the mother's hair can make the distinction possible.

Absorption and retention of methylmercury

Methylmercury is almost completely absorbed from the gastrointestinal tract irrespective of the form in which it is consumed. There is no difference in the absorption rate if it is taken in solution or as a constituent of contaminated fish. For all practical considerations, therefore, the intake of methylmercury in the diet can be equated to its uptake.

After a single intake of methylmercury, it enters the bloodstream and from there is distributed to all organs and tissues. The level of methylmercury in the blood, therefore, rises sharply following intake. The level declines as part of the mercury moves from the blood to other tissues and organs. It is for this reason, that after a single intake the desaturation from the blood is faster than from the body as a whole. This is sometimes inaccurately expressed by stating the half-life of methylmercury in the blood is shorter than in the body as a whole.

In animal experiments it has been shown methylmercury is eliminated into the gut with the bile. Close to 80 per cent of it enters the gut as methylmercury cysteine. This portion of methylmercury is quickly reabsorbed and contributes little to the overall excretion. A non-cysteine protein complex of methylmercury is partly reabsorbed, whereas a non-cysteine protein complex of inorganic mercury is largely eliminated. For these reasons, it is assumed that biotransformation of methylmercury in the liver has an effect on the elimination rate and biological half-life of methylmercury in man.

Other pathways of elimination of methylmercury into the gut include the exfoliation of intestinal cells and secretion of pancreatic juices. Any physiological factor influencing biliary excretion or reabsorption from the gut has an effect on the fraction of the body burden eliminated per unit time. Also the presence of poorly soluble chelating agents which form insoluble complexes with methylmercury increase its elimination rate from the body. It is, therefore, not surprising to find individual differences in the elimination rate from person to person or even in the same person at different times.

For the purpose of calculations, 70 days may be used as a representative half-life of methylmercury in the body. From the half-life ($T_{½}$) of 70 days it is possible to calculate the fraction (λ) of the body burden eliminated per day.

Equation 1

$$\lambda = \frac{\ln 2}{T_{½}} = \frac{0.7}{70} = 0.01 \text{ per day}$$

About one per cent of the body burden of methylmercury is eliminated per day.

After a single intake of methylmercury the body burden rapidly reaches a maximum and then declines according to an exponential function.

Equation 2

$$B_t = B_o e^{\frac{-\ln 2}{T_{½}} t}$$

B_o = Body burden at time t = 0

B_t = Body burden t days later

The time course of body burden of methylmercury resulting from long-term intake at constant rate can be expressed by Equation 3.

Equation 3.

$$B_t = \frac{I T_{½}}{\ln 2}\left(1 - e^{\frac{-\ln 2}{T_{½}} t}\right)$$

I = the intake of methylmercury per day

The build-up of the body burden resulting from long-term intake according to Equation 3 is graphically presented in Fig. 1 (page 10). The desaturation from the body according to Equation 2 is represented in the same figure.

Equation 3 indicates that as the time "t" increases, the term

$$e^{\frac{-\ln 2}{T_{½}} t}$$

decreases and for large values of "t," the term asymptotically approaches zero. As a result:

Equation 4.

$$B_t \cong I \times \frac{T_{½}}{\ln 2} \cong I \times \frac{70}{0.7} \cong 100\ I$$

With long-term intake of methylmercury at a constant rate a steady state is approached when the body burden represents one hundred times the daily intake.

It is evident that the intake of methylmercury from fish depends on its concentration in the fish and on the quantity of fish consumed per unit time. As can be seen from Equation 3 and Fig. 1, the body burden of methylmercury reached also depends on the period of time of intake of methylmercury.

Most individuals consume on the average less than 0.02 milligrams of methylmercury per day leading to a steady state body burden of less than two milligrams. If such a person suddenly significantly increases his daily intake of methylmercury from I = 0.02 mg to I′ mg per day his body burden (B_{ts}) will increase to a higher value according to the time period of the new intake (t_s) according to Equation 5.

Equation 5.

$$B_{t_s} = \frac{I}{\lambda} + \frac{I' - I}{\lambda}\left(1 - e^{-\lambda t_s}\right)$$

t_s = Saturation time = time of increased methylmercury intake

If, after having an increased intake I′ for the period t_s leading to a body burden B_{ts} a person returns to his/her original lower intake I for the time period of desaturation (t_d) his/her body burden will decrease with time of desaturation t_d according to Equation 6.

Equation 6.

$$B_{t_d} = \frac{I}{\lambda} + \frac{I' - I}{\lambda}\left(1 - e^{-\lambda t_s}\right) e^{-\lambda t_d}$$

As the desaturation time t_d increases the body burden asymptotically approaches the original steady state body burden (see Fig. 3 page 10). After six months the body burden is only about 10 per cent more than the body burden before the increased intake started.

Relation of mercury levels in blood and brain to body burden

As a rule it is not possible to determine directly the body burden of a person. Under normal circumstances information on methylmercury intake is not accurate enough to derive a value of body burden using calculations outlined in the previous section.

Measuring methylmercury in excreta is a cumbersome method and errors in estimated body burden could easily be introduced resulting from biotransformation of methylmercury in the body to inorganic mercury. Determining the concentration of methylmercury in the hair is a practical method of estimating the body burden in individuals. Calculating the body burden from blood concentration is another frequently used method.

The level of methylmercury in blood at steady state is closely related to the total body burden. Under these conditions, a level of 20 nanograms of methylmercury per gram of blood corresponds to a body burden of about two milligrams. This is not the case, however, when there has been a recent large increase in the intake of methylmercury. For most practical

purposes, the blood level of mercury is a good indicator of body burden at the time the blood sample is obtained from an average adult. A single determination of methylmercury in blood can be an unreliable indicator of past exposure to methylmercury and, therefore, of the body burden of the exposed person in the past.

Analysis of mercury in hair can supply some historic information. The level of mercury in the growing hair is related to actual blood level and body burden. With increasing distance of the hair from the scalp, the hair level reflects past blood levels and body burdens. Analysing hair in sections with increasing distance from the scalp thus allows a certain degree of reconstruction of the exposure history. Because the length of hair used in measurement represents a period of about three weeks, readings are averaged. Therefore, one cannot always find a close relationship between blood levels and hair levels. The discrepancies will be greatest if large fluctuations in intake patterns occurred at the time of sampling. A recent significant intake of methylmercury, for example, would show up in the blood level but not in the hair level. Both of these survey methods have their specific applications and can effectively complement each other.

For the purpose of estimating the body burden of an adult, it is usually assumed that every 10 nanograms of methylmercury per cubic centimetre of blood corresponds to a body burden of one milligram. The concentration of methylmercury in hair is about 300 times that in blood. Every three micrograms of methylmercury per gram of hair therefore correspond to a body burden of one milligram.

Acceptable levels of methylmercury in the body

As previously discussed, signs or symptoms of methylmercury poisoning are generally absent in persons with a body burden of less than 20 mg. The probability of finding clinical symptoms of mercury poisoning increases as the body burden of mercury increases above 20 milligrams.

The World Health Organization recommends that daily consumption not exceed 35 micrograms of total mercury or 30 micrograms of methylmercury. This daily intake would lead to an equilibrium body burden of three milligrams. This would correspond to an average daily intake of 60 grams of fish containing 0.5 micrograms per gram (ppm) or 30 grams of fish containing one microgram per gram (ppm) of methylmercury.

Data from Statistics Canada indicate that the daily per capita fish consumption is about 18 grams (0.6 oz.). This value might be somewhat high as an average, but individuals who eat fish regularly probably consume about 120 grams (4.2 oz.) of fish per week, which corresponds to about 18 grams (0.6 oz.) of fish per day.

The consumption of about 18 grams (0.6 oz.) of fish per day at the federal guideline of 0.5 microgram of methylmercury per gram of fish would result in an estimated body burden of one milligram.

Estimates of body burdens in several population groups in Ontario indicate that the two to three milligrams maximum recommended by the W.H.O. is generally not exceeded. This is not the case, however, in areas such as Grassy Narrows (English River Indian Reserve No. 21) and Whitedog (Islington Indian Reserve No. 29) in northwestern Ontario where high fish consumption patterns allied with high fish mercury levels have resulted in body burdens greater than the recommended levels in some individuals.

The toxic effect of methylmercury is ultimately related to its concentration in the individual. Guidelines developed in this report are for adults. Obviously the same intake in a larger person would produce a lower concentration of methylmercury in blood and tissues; in a smaller person or in a child it would produce higher concentrations. Methylmercury intake in a child, therefore, has to be further reduced.

The effects of severe exposure of the fetus have been dealt with in the section on clinical effects. It should be stressed, however, that exposure of the fetus at much lower levels might give rise to effects that may not be apparent at birth but might appear later in life.

Follow-up examinations of children who were normal at birth but whose mothers had exposure to methylmercury in Iraq in 1971 have shown signs of delayed motor and intellectual development.

The degree of methylmercury exposure in the mother which will cause behavioral and developmental changes in the infant is not known at present. Thus, great care has to be taken to avoid excessive exposure of the fetus to methylmercury. A woman should avoid excessive intake of methylmercury not only during pregnancy but also some time beforehand. Mercury intake should also be minimal during the lactation period as mother's milk can be another source of methylmercury for the infant.

Polychlorinated biphenyls (PCB) and Mirex (Dechlorane)

PCB
This is a group of chlorinated organic compounds formerly used widely in industry but now closely controlled. However, PCB have persisted in the environment and accumulated in food chains until effects have been noticed in wildlife.

Recently two harmful effects of PCB in animals have been noted. First, they interfere with fertility, pregnancy, birth and development of the offspring. Second, PCB may be carcinogenic.

PCB are absorbed from the stomach and stored in the fatty tissues.

The federal guideline for PCB is 2 ppm in the edible portion of fish.

Mirex
This chemical persists in the environment and accumulates in food chains resulting in contamination of some species of fish in a number of locations throughout Lake Ontario. Mirex is found at very low concentrations in other parts of Canada.

Recently, mirex has been found to be carcinogenic in animal experiments.

Based on these preliminary experiments, precautions are being taken to limit the human intake of mirex.

The federal guideline for mirex is based on the U.S. guideline of 0.1 ppm in the edible portion of fish.

Other contaminants

Several other contaminants, including DDT, have been found in fish. The experimental work done thus far does not warrant action to restrict the intake of fish at the present time. If results of monitoring or of research show significant new findings, then this position will be reviewed.

DDT
This compound was at one time widely used resulting in major environmental damage. Since 1969, DDT use has been greatly restricted in Ontario. As a result, levels of DDT and its metabolites DDE and DDD found in fish are declining and the burden to the environment is much less *even though levels exceeding 5 ppm in fish are found in some locations.* The federal guideline below which DDT and its metabolites are considered acceptable for consumption is 5 ppm.

Kepone
This is a pesticide used in the U.S. to control fire ants and termites. A major industrial exposure resulted in workers developing numerous neurological symptoms and nerve damage, some of which appears to be permanent. Kepone is not used in Canada. Only a few Ontario fish specimens have been examined to date for Kepone and it has not been detected.

Dechlorane-plus
This is a chlorinated organic compound used as fire retardant and as a substitute for mirex (Dechlorane). Several manufacturing plants in Ontario have used it. Dechlorane-plus has been detected in factory effluents and in leachate from landfill sites but has not yet been detected in fish.

Polynuclear aromatic hydrocarbons (PAH)
These complex organic compounds form a large group of several thousand substances, many of which have been demonstrated to cause cancer in experimental animals. They are produced by the burning of organic material such as wood, coal, gasoline and cigarettes. They are emitted from coke ovens and are also formed naturally by rotting leaves and wood. Some of these substances have been detected in fish but the significance of their presence is unclear. The problem is under active review to determine what PAH levels occur naturally due to runoff from the forests, what PAH, levels can be reduced by pollution control equipment in factories and what levels are the result of diffuse sources such as home heating.

Polybrominated biphenyls (PBB)
These substances are similar to PCB and are used as fire retardants. PBB accidentally contaminated animal feed in Michigan resulting in the destruction and disposal of many animals in order to protect the food supply. However, no polybrominated biphenyls have been detected in the general environment or entering the food chains.

Heavy metals other than mercury
Levels of heavy metals such as lead, arsenic and cadmium are being monitored and levels found to date indicate that these metals are not present in sufficient concentration to pose a hazard.

Rationale for Consumption Guidelines of PCB, Mirex and some other Organic Pollutants
A guideline for the acceptable level of these pollutants is arrived at after consideration of available data, generally from animal experiments. Both PCB and mirex, as cases in point, have induced liver nodules in rats and mice at high doses and are therefore suspect as human carcinogens. For most organic compounds, this data base is small although general effects of a class of compounds may be known.

The level at which no effects are observed in the given animal experiment are noted and extrapolation to human populations is carried out. In the case of cancer-causing agents, it is generally assumed that there is no level at which no effect is produced and that cancer risk increases proportionately to dose. This continuum of dose-response means that any guideline selected is necessarily arbitrary. The guideline therefore, does not represent an absolutely safe level. Instead, it is derived taking into account a variety of considerations leading to determination of a risk considered acceptable to society.

Chlorinated organic compounds, including PCB and mirex, have adverse effects on reproduction. Data on mirex are sparse but PCB produced these effects at doses down to 2.5 ppm in the total diet of Rhesus monkeys.

Other considerations for setting guidelines with regard to cancer-causing agents include the latent period, the mean age of onset and the period of exposure.

There is a time lag between exposure to a cancer-causing agent and the development of a cancer. This time lag, often called latent period is long, 20 or 30 years, in the case of

PART III
Guidance to anglers

human exposure. Therefore, the effect of a carcinogen might not become apparent for long periods of time and guidelines have to be set conservatively low to protect the public health. This is true especially in the cases where children are exposed to pollutants such as those entering the food supply.

It has been observed that certain substances lower the mean age of onset for normally occurring cancers in a given population. Any guideline should therefore take into account the possibility of this type of effect.

Exposure of a population group to a carcinogen may lead to cancer many years later. Exposure of the fetus to a chemical consumed by the mother is of special concern. For example, pregnant women given DES (diethylstilbesterol) to prevent miscarriage, bore female children showing an increased risk of vaginal cancer during their teenage years. Similarly exposure of the fetus to x-rays increases the risk of leukemia later in life.

The discussion indicates that guidelines can be given only with a limited degree of accuracy in the case of toxic substances and an effort is made to be sufficiently conservative to err on the safe side.

In the case of carcinogens no absolutely safe level exists and a guideline can be established only taking into account a number of parameters allowing to make the best estimate of an acceptable risk.

Fig. 1
Accumulation of methylmercury in the body with constant daily intake and desaturation from the body following cessation of methylmercury intake.

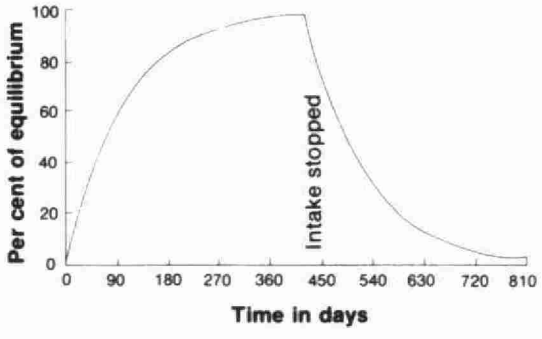
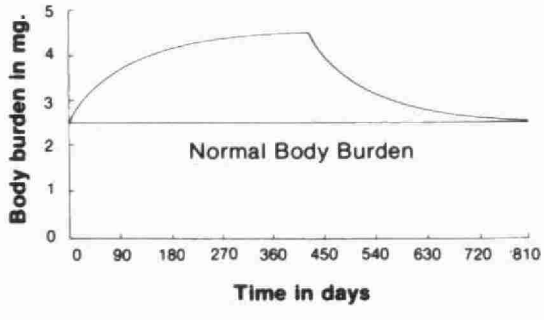


Fig. 2
Time course of body burden following increased intake at time t = 0 and returning to normal intake at time t = 420 days.



Fish consumption recommendations

In developing guidelines for anglers, those who fish on and off for part of the year exceeding three weeks are considered long-term consumers. Those who fish for shorter periods are considered short-term consumers.

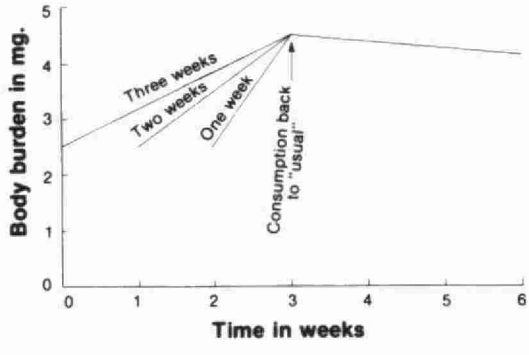
Fish in lakes and rivers tested have been categorized according to the mercury levels found in them. There are four categories: A, B, C and D. "A" fish are those for which there are generally no consumption restrictions; "B" and "C" fish may be eaten in restricted amounts; and "D" fish should not be eaten.

Fish containing in excess of the federal guideline for PCB, mirex or DDT may be consumed occasionally.

Short-term consumption

It is assumed the short-term angler arrives at the fishing area with a maximum body burden of two to three milligrams of methylmercury. He or she then increases the intake of methylmercury for a one, two or three-week period. As a result of this increased intake, the body burden will rise during the one to three weeks, and decline again with the return to a normal diet (see Fig. 3 below).

Fig. 3
Change in body burden due to an increased intake according to Table II and return to maximum "normal" intake of 30 micrograms of methylmercury per day.



Based on the information reviewed in Part II, a transient increase in a person's body burden of about two milligrams above normal is considered acceptable. A body burden of five milligrams is 25 per cent of 20 milligrams, the minimal body burden known to be associated with low probability of clinical symptoms of mercury poisoning. This means the body burden can rise during a fishing trip by about two milligrams, reaching a maximum level of about four to five milligrams for a relatively short period of time. When the person returns to a normal diet, mercury levels gradually drop to the level existing before the fishing trip. It is also recommended that fishing trips in which fish of categories B and C are eaten should be spaced at least six months apart.

Table I indicates the allowable intake of fish of categories A, B and C that would lead to an increase in body burden of two milligrams. It is, of course, not possible to extend the intake of fish over the three-week period without exceeding the short-term body burden considered acceptable. Freezing fish of categories B and C for consumption over a more prolonged period of time is discouraged. The table also indicates how many meals per week of fish can be safely consumed over a period of one, two or three weeks in relation to the category of fish.

Table I

Recommendations for short-term consumption

Category	One week	Two weeks	Three weeks
A	No restrictions*	No restrictions*	No restrictions*
B	10 meals 2.3 kg/week (5.1 lb./week)	5 meals 1.3 kg/week (2.8 lb./week)	4 meals 0.95 kg/week (2.1 lb./week)
C	7 meals 1.54 kg/week (3.4 lb./week)	4 meals 0.86 kg/week (1.9 lb./week)	3 meals 0.63 kg/week (1.4 lb./week)
D	None	None	None

NOTES

Women of childbearing age and children under 15 years should eat fish from category A only.

Anglers should NOT take home fish for freezing and later consumption unless it is from category A.

Fish containing more than the maximum level of PCB, mirex and DDT indicated by the Federal guidelines should be eaten only occasionally. For the purpose of short-term consumption this means one to 2 meals per week.

A meal is approximately the equivalent of 230 grams (8 oz.).

*No restrictions are placed on consumption of fish in this category according to federal guidelines.

Where applicable, both Tables I and III reflect guidelines set for PCB, mirex and DDT. The PCB guideline is two parts per million. The level for mirex is 0.1 parts per million in the edible portion of the fish, a provisional guideline based on the U.S. guideline. The guideline for DDT is 5 ppm.

Table II indicates the daily intake that would increase the body burden of methylmercury from three to five milligrams.

Table II

The daily intake of methylmercury leading to an increase of the body burden from three to five milligrams:

Period of consumption	Intake of methylmercury per day in micrograms
1 week	330
2 weeks	180
3 weeks	136

Long-term consumption

With constant intake, the body burden of methylmercury in long-term consumers will reach a steady state. When the daily intake equals the amount eliminated each day, the body burden will reach one hundred times the daily intake.

The recommendations for long-term consumption, summarized in Table III are based on these assumptions and on an acceptable body burden of two to three milligrams.

It is evident that fishing guides themselves are considered long-term consumers and therefore the recommendations in Table III apply to them.

Table III

Recommendation for long-term consumption**

Fish Category	Meals
A*	No restrictions*
B	0.226 kg/week 0.5 lb./week
C	0.136 kg/week 0.3 lb./week
D	NONE

NOTES

Fish containing more than the maximum level of PCB, mirex and DDT indicated by the federal guidelines should be eaten only occasionally. For the purpose of long-term consumption, this means one to 2 meals per month.

A meal is approximately the equivalent of 230 grams (8 oz.).

*No restrictions are placed on consumption of fish in this category according to federal guidelines.

**For the purpose of this recommendation, those who fish on and off for part of the year exceeding 3 weeks are considered long-term consumers.

Part IV
Contaminant levels in fish and sediments

Most of the contaminant data in the preceding tables were produced by Ontario Government laboratories. In several cases, sampling of fish from a particular body of water for mercury analysis has been performed over two or more years. In all such cases, the most recent data available have been used to produce the summaries for mercury, PCBs and mirex.

Altogether, some 30,000 fish have been analysed over the past five years providing about 170,000 information bits pertaining to species, length, weight, location and mercury/PCB/mirex level.

This report contains information on 144 inland lakes and rivers plus 23 locations in the Great Lakes for a total of 167 locations. This information is based on data from about 19,000 fish; the remaining data were rejected because they have been superceded by more recent data or because the statistical sample of some species in some lakes was too small; or, because analyses were performed at laboratories other than those of the Ontario Ministry of the Environment. Information from other laboratories on individual fish size, weight and contaminant content was not available at the time this report was published.

Location

Lake names, latitude and longitude, and township, country or district information were obtained from the Gazeteer of Canada (Ontario), published by Energy, Mines, and Resources Canada (1975). For those lakes not listed in the Gazeteer, the field staff responsible for the fish collection supplied the information.

Information from the Great Lakes was broken down according to statistical districts defined by the Ministry of Natural Resources (see maps). Where possible, separate collections from an individual statistical district were identified according to specific location of capture of the fish.

Mercury

The information on mercury concentration in relation to fish length was derived from regression analysis, a statistical method of relating one set of data (mercury concentration) to another (length of fish). On this basis, a letter from A to D was assigned to the length of each fish species according to the following:

A mercury concentration of 0.5 ppm (parts per million) or less

B mercury concentration falls between more than 0.5 ppm and 1.0 ppm

C mercury concentration falls between more than 1.0 ppm and up to 1.5 ppm

D mercury concentration exceeds 1.5 ppm

– no data was available for this length range.

Where the data was not suited to regression analysis, letters were assigned as a result of subjective judgments based on available data.

In many areas of Ontario, yearly variations in mercury concentration are not uncommon, particularly in those areas recovering from industrial contamination. Subsequent summaries from some lakes, therefore, might show different mercury-to-length relationships than those contained in this manual.

As can be seen from the tables, the mercury in a fish species generally increases with the size of the fish. Therefore, if a fish has a designation "A" for a particular length range, specimens smaller than that length will also be classified "A".

Similarly, fish larger than a length range with a "D" designation will also be in the "D" category.

PCB and mirex

Current guidelines stipulate that fish containing up to two parts per million for PCB, and up to 0.1 ppm for mirex may be regularly consumed in reasonable quantities . On this basis, fish containing less than two parts per million PCB or 0.1 ppm mirex are designated acceptable. Fish containing **more than two parts per million PCB or more than 0.1 ppm mirex, exceed the guidelines and consumption should be limited to occasional meals as defined under Tables I and III on page** 11.

In general, concentrations of PCB and mirex increase with the size of the fish, but this relationship is usually more poorly defined than in the case of mercury, since other factors, such as the amount of fat in the fish, also affect PCB and mirex concentrations. Where possible, regression analysis was used to determine the size at which the mean level of PCB or mirex approached the two parts per million **and 0.1 ppm guidelines respectively.** In cases where the size could not be estimated, an asterisk (*) was used to indicate that no information outside the stated length range was available.

Limitations of data base

To date, fish sampling and analytical capacity restrictions have limited the overall volume of data available on mercury, organic and inorganic contaminants in fish in Ontario. Thus, statistically valid conclusions on the levels of pollutants in many areas and in many fish species cannot always be drawn. Some lakes have not been sampled at all, and for others, not all species have been sampled.

Expansion of tests

The following steps will be implemented to extend the currently available data base to a suitable size for proper evaluation of overall pollutant distribution in Ontario.

a. Analysis of currently available fish samples.

b. Planning of future sampling programs
   i. to fill in gaps in the geographic picture of organic and inorganic pollutant distribution.
   ii. to provide sufficiently large samplings of species of interest to sport fishermen, to allow size or weight specific analysis based on published pollutant tolerances and other pertinent health information.

Part V
Fish consumption tables by waterbody

c. Use of other available data bases with compatible analytical data to complete the overall picture, including:
   - Canada Centre for Inland Waters (Environment Canada),
   - Environment Canada Fisheries and Marine Service.
   - International Joint Commission U.S.-based data.

d. Determination of relationships, if any, for specific species between pollutant concentrations in fish muscle and those in whole body, to permit use of data bases determined using whole body analysis.

Each table contains the name of the lake or river, map reference, district or county in which the waterbody is located. Fish tested are categorized A, B, C or D according to mercury level (see page 12 for details). Separate comments are made regarding PCBs and mirex in lakes or rivers where these contaminants occur.

Lake Abitibi,
4842/7945, Cochrane District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	A	A	A	B	B	B	B
Sauger	–	A	B	B	D	D	–	–	–	–
Walleye	–	–	–	A	B	B	C	D	D	–
Cisco	A	A	A	A	A	–	–	–	–	–
Goldeye	–	A	A	B	B	–	–	–	–	–
White Sucker	–	–	A	A	A	A	–	–	–	–

Agnew Lake,
4622/8145, Sudbury District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	B	B	B	C	–	–
Pike	–	–	–	A	B	B	–	–	–	–

Agonzon Lake,
4901/8550, Thunder Bay District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Yellow Perch	A	A	A	A	A	–	–	–	–	–
Walleye	–	–	–	A	A	A	B	B	–	–
White Sucker	–	A	A	A	A	A	–	–	–	–

Amkougami Lake,
4812/8005, Bernhardt Twp.,
Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	A	A	A	A	B	C	–

Anstruther Lake,
4445/7812, Anstruther Twp.,
Peterborough County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	–	A	A	A	B	C	–	–

Aylen Lake,
4537/7751, Dickens Twp.,
Nipissing District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Whitefish	–	–	A	A	–	–	–	–	–	–
Lake Trout	–	–	–	A	A	A	B	C	C	–

Badesdawa Lake,
5145/8945, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	A	B	B	B	C	–	–
Redhorse Sucker	–	–	–	A	A	A	–	–	–	–
Longnose Sucker	–	–	–	A	A	A	A	–	–	–
Whitefish	–	–	–	A	A	A	A	–	–	–
Walleye	–	–	–	A	B	B	B	–	–	–
Cisco	–	–	A	A	A	A	–	–	–	–

Ball Lake,
5018/9400, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	B	B	D	D	D	D	D
Walleye	–	–	–	C	D	D	D	D	D	D
Whitefish	–	–	–	A	B	B	C	–	–	–
White Sucker	–	–	–	A	B	C	D	D	D	–
Mooneye	–	–	A	B	C	D	–	–	–	–
Yellow Perch	–	B	C	D	D	D	–	–	–	–
Sauger	–	C	D	D	D	D	D	–	–	–
Smallmouth Bass	–	–	–	–	D	D	–	–	–	–
Cisco	–	–	–	–	D	D	–	–	–	–

Bennet Lake,
4948/8218, Guilfoyle Twp.,
Cochrane District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	–	–	A	B	C	–	–
Pike	–	–	–	–	–	A	A	B	–	–

Black River,
4842/8038, Walker Twp.,
Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	B	B	B	C	D	D	D	–

Blueberry Lake,
5009/9444, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	A	A	A	B	C	D	D
Walleye	–	–	–	A	A	B	B	C	–	–
White Sucker	A	A	A	A	A	A	A	–	–	–
Yellow Perch	A	A	A	A	A	–	–	–	–	–

Bow Lake,
4442/7800, Methuen Twp.,
Peterborough County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Smallmouth Bass	–	A	A	A	A	C	D	–	–	–

Buck Lake,
4926/9431, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	–	–	–	B	C	D	D	–

Caribou Lake,
4556/8004, McConkey Twp
Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Smallmouth Bass	–	–	A	A	B	C	–	–	–	–
Lake Trout	–	–	–	–	–	B	B	–	–	–
Walleye	–	–	–	–	–	B	D	D	–	–

Chase Lake,
5037/9457, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	A	A	A	A	B	B	C
Walleye	–	–	A	A	A	B	C	C	–	–
Cisco	–	A	A	A	A	A	–	–	–	–
White Sucker	–	–	–	A	A	A	A	–	–	–

Cheddar Lake,
4458/7808, Cardiff Twp.,
Haliburton County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Brown Trout	–	A	A	A	A	A	B	–	–	–

Clay Lake,
5003/9330, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	–	–	D	D	D	D	D
Pike	–	–	–	–	–	D	D	D	D	D
Whitefish	–	–	–	–	–	C	D	D	D	–

Constance Lake,
4524/7559, March Twp.,
Carleton County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	A	A	A	A	B	–	–

Crosswise Lake,
4724/7939, Coleman Twp.,
Timiskaming District

Mercury and PCB concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Smallmouth Bass	–	–	–	C	C	–	–	–	–	–
	Smallmouth Bass up to 13" contained levels of PCB* below the Feredal Guideline.									
Yellow Perch	B	C	C	C	–	–	–	–	–	–
Pumpkinseed	B	–	–	–	–	–	–	–	–	–
White Sucker	–	A	A	A	B	–	–	–	–	–
	White Sucker up to 14"contained levels of PCB* below the Federal Guideline.									

*Data not available over this length.

Crowe Lake,
4429/7744, Belmont Twp.,
Peterborough County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	–	B	B	B	C	–	–
Smallmouth Bass	–	–	–	B	B	C	C	–	–	–

The Dalles,
4953/9432, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	B	B	B	C	–	–
Pike	–	–	–	A	A	A	B	B	C	D
Yellow Perch	–	A	A	A	A	–	–	–	–	–
Redhorse Sucker	–	–	A	A	A	B	–	–	–	–
White Sucker	–	–	–	A	A	A	B	–	–	–
Sauger	–	A	B	C	D	–	–	–	–	–
Cisco	–	–	A	A	–	–	–	–	–	–
Brown Bullhead	–	–	A	A	A	–	–	–	–	–
Rock Bass	–	B	–	–	–	–	–	–	–	–

Delaney Lake,
5005/9403, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
White Sucker	–	A	A	A	A	A	A	–	–	–
Smallmouth Bass	–	A	A	A	A	A	B	–	–	–
Rock Bass	A	A	A	A	B	–	–	–	–	–
Ling	–	–	–	–	A	A	A	B	C	–
Lake Trout	–	–	–	–	–	A	A	A	A	–
Whitefish	–	–	–	–	–	–	A	A	A	–
Pike	–	–	–	–	–	–	–	A	B	–

Dollars Lake,
4556/8013, Blair Twp.,
Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	B	B	C	–	–	–
Smallmouth Bass	–	–	A	A	B	B	–	–	–	–

Eagle Lake,
5040/9453, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	A	B	B	C	D	D
White Sucker	–	–	–	–	A	A	A	B	–	–
Walleye	–	A	A	B	B	B	C	D	–	–
Whitefish	–	–	–	A	A	A	A	A	–	–
Yellow Perch	–	A	A	A	A	–	–	–	–	–

Eden Lake,
5040/9459, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Whitefish	–	–	A	A	A	A	A	–	–	–
Lake Trout	–	–	–	A	A	A	A	B	–	–
Burbot	–	–	–	–	–	A	A	A	B	–
White Sucker	–	–	–	–	–	A	B	–	–	–

Eels Lake,
4454/7808, Anstruther Twp.,
Peterborough County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	A	A	A	A	A	A	–	–

Elliot Lake,
4623/8242, Algoma District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	–	A	A	A	B	C	D	D

Emerald Lake,
4654/8019, Afton Twp.,
Sudbury District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	–	A	A	A	–	–	–	–

Evangeline Lake,
4608/8152, McKinnon Twp.,
Sudbury District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	B	B	B	–	–	–
Pike	–	–	–	A	A	B	B	B	–	–

Favel Lake,
5000/9400, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	–	A	A	A	B	B	–	–
White Sucker	–	–	–	–	–	A	A	–	–	–

Francklyn Lake,
4937/8230, Nixon Twp.,
Cochrane District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	–	B	B	C	D	–	–

Fraser Lake,
4603/8005, I.R. 9,
Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Largemouth Bass	–	–	A	A	B	B	C	–	–	–

Frederick House Lake,
4839/8055, Evelyn Twp.,
Cochrane District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	A	A	B	B	–	–
Walleye	–	–	–	A	B	B	–	–	–	–

French River,
4556/8054, Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Ling	–	–	–	–	A	A	A	B	B	–
Walleye	–	–	–	A	A	A	B	B	–	–
Whitefish	–	–	–	–	–	A	A	–	–	–

Lower French River,
4556/8054, Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	A	B	B	C	–	–
White Sucker	–	–	–	A	A	A	A	–	–	–
Smallmouth Bass	–	–	A	A	A	B	–	–	–	–

Upper French River,
4556/8054, Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Smallmouth Bass	–	A	A	A	A	B	–	–	–	–
Walleye	–	–	–	A	A	A	B	–	–	–
White Sucker	–	–	A	A	A	A	B	–	–	–
Pike	–	–	–	–	–	–	A	A	–	–

Garden Lake,
5010/9400, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	B	B	C	D	D	–	–
Pike	–	–	–	A	B	C	D	D	–	–

Gaugino Lake,
4909/8542, Nickle Twp.,
Thunder Bay District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Yellow Perch	A	A	A	A	A	–	–	–	–	–
Walleye	–	–	–	A	B	C	–	–	–	–

Giroux Lake,
4722/7940, Coleman Twp.,
Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	A	A	A	A	–	–	–

Gooseneck Lake,
5002/9448, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	–	A	A	A	B	B	C	C
Pike	–	–	–	A	A	A	B	B	C	C
Cisco	A	A	B	–	–	–	–	–	–	–
Smallmouth Bass	–	–	–	B	B	C	D	–	–	–
White Sucker	–	–	–	–	A	A	A	A	–	–
Redhorse Sucker	–	–	–	–	A	A	A	–	–	–

Gough Lake,
4618/8158, Gough Twp.,
Sudbury District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	B	B	C	C	D	D

Grassy Narrows Lake,
5009/9359, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	B	C	D	D	D	D
Walleye	–	–	–	C	D	D	D	D	D	–
White Sucker	–	–	–	A	A	B	B	–	–	–
Mooneye	–	–	A	B	B	C	–	–	–	–
Sauger	–	B	C	D	D	D	–	–	–	–
Whitefish	–	–	–	–	A	A	B	–	–	–
Cisco	–	–	A	A	A	B	–	–	–	–
Yellow Perch	A	B	B	–	–	–	–	–	–	–

Guilfoyle Lake,
4945/8221, Guilfoyle Twp.,
Cochrane District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	A	A	B	–	–	–
Pike	–	–	–	–	–	A	A	A	–	–

Gun Lake,
4957/9439, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	–	–	B	B	C	C
White Sucker	A	A	A	A	A	A	A	–	–	–
Walleye	–	–	–	A	A	B	B	C	D	D
Cisco	A	A	A	A	A	A	–	–	–	–
Yellow Perch	A	A	A	–	–	–	–	–	–	–
Sauger	–	–	–	B	–	–	–	–	–	–
Mooneye	–	–	–	–	A	A	–	–	–	–

Hamlock Lake #1,
4606/8007, I.R. 9,
Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Largemouth Bass	–	A	A	B	B	C	C	–	–	–
Rock Bass	–	A	A	B	–	–	–	–	–	–

Hamlock Lake #2,
4606/8006 I.R. 9,
Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Largemouth Bass	–	–	A	A	A	B	–	–	–	–
Yellow Perch	–	A	B	–	–	–	–	–	–	–
Rock Bass	–	B	–	–	–	–	–	–	–	–

Harris Lake,
4606/8007, I.R. 9,
Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Largemouth Bass	–	A	A	B	B	C	–	–	–	–

Hogan Lake,
4552/7830, Freswick Twp.,
Nipissing District

Mercury concentration in relation to fish lengths

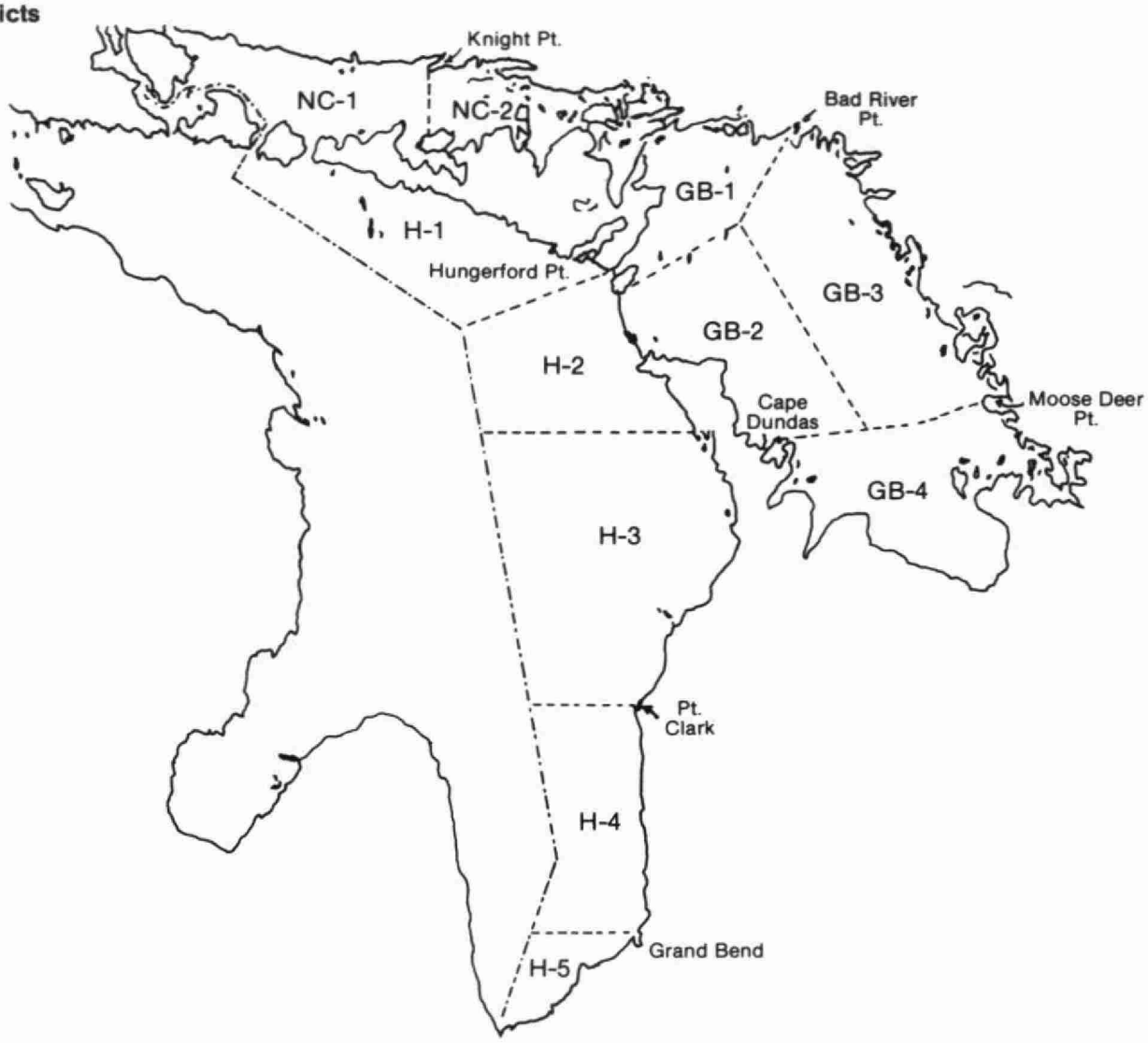
Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Brown Trout	–	A	A	A	A	A	B	–	–	–

Howard Lake,
4814/7949, Arnold Twp.,
Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	B	B	B	B	B	–
Walleye	–	–	–	B	B	B	C	–	–	–

Statistical Districts
Lake Huron



Lake Huron,
H3 (Douglas Point, Saugeen River)

Mercury and PCB concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Rainbow Trout	–	–	–	A	A	A	A	A	–	–
	Rainbow Trout over 26" contained levels of PCB above the Federal Guideline.									
Chinook	Chinook Salmon over 12" contained levels of PCB above the Federal Guideline.									
White Sucker	–	–	–	–	A	A	B	–	–	–
Pike	–	–	–	–	–	A	A	A	A	A

Lake Huron,
GB3 (Raft Island Britt, Moon River)

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	A	A	A	A	A	B	B
Walleye	–	–	–	A	A	A	B	C	D	D

Lake Huron,
H4 (Goderich)

Mercury and PCB concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Rainbow Trout	–	–	–	A	A	A	A	–	–	–
Rainbow Trout over 22" contained levels of PCB above the Federal Guideline.										
White Sucker	–	–	A	A	A	A	–	–	–	–
White Sucker over 18" contained levels of PCB above the Federal Guideline.										
Yellow Perch	–	A	A	A	–	–	–	–	–	–
Yellow Perch up to 10" contained levels of PCB* below the Federal Guideline.										

*Data over this length not available.

Lake Huron,
GB4 (Thornbury, Owen Sound)

Mercury and PCB concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Rainbow Trout	–	–	–	A	A	A	A	A	–	–
Rainbow Trout over 26" contained levels of PCB above the Federal Guideline.										
White Sucker	–	–	A	A	A	–	–	–	–	–
White Sucker over 14" contained levels of PCB above the Federal Guideline.										
Yellow Perch	–	A	A	A	A	–	–	–	–	–
Yellow Perch up to 12" contained levels of PCB* below the Federal Guideline.										

*Data over this length not available.

Lake Huron,
GB4 (Nottawasaga Bay, Penetang, Midland)

Mercury and PCB concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Yellow Perch	–	A	A	–	–	–	–	–	–	–
Yellow Perch up to 14" contained levels of PCB* below the Federal Guideline.										
Walleye	–	–	–	A	A	A	A	B	C	–
Walleye up to 30" contained levels of PCB* below the Federal Guideline.										
Rainbow Trout	–	–	–	A	A	A	A	A	–	–
Rainbow Trout over 26" contained levels of PCB above the Federal Guideline.										
Rock Bass	–	A	A	–	–	–	–	–	–	–
Rock Bass up to 9" contained levels of PCB* below the Federal Guideline.										
White Sucker	–	–	–	A	A	–	–	–	–	–
White Sucker over 14 " contained levels of PCB above the Federal Guideline.										

*Data over this length not available.

Lake Huron,
NC1 (Lake George, St. Mary's River)

Mercury and PCB concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	A	A	A	A	B	–
Northern Pike up to 30" contained levels of PCB* below the Federal Guideline.										
White Sucker	–	–	–	–	A	A	A	–	–	–
White Sucker up to 19" contained levels of PCB* below the Federal Guideline.										
Yellow Perch	–	A	A	A	A	–	–	–	–	–
Yellow Perch up to 13" contained levels of PCB* below the Federal Guideline.										
Rainbow Trout	–	–	–	A	A	A	A	A	A	–
Lake Trout	–	–	–	A	A	A	A	B	–	–

*Data over this length not available.

Lake Huron,
NC1 (Serpent River)

Mercury and PCB concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
White Sucker	–	–	–	A	A	A	A	–	–	–
	White Sucker up to 18" contained levels of PCB* below the Federal Guideline.									
Yellow Perch	–	–	A	A	B	–	–	–	–	–
	Yellow Perch up to 13" contained levels of PCB* below the Federal Guideline.									
Pike	–	–	–	–	–	A	A	A	B	B
	Northern Pike up to 30" contained levels of PCB* below the Federal Guideline.									
Walleye	–	–	–	A	A	A	B	B	–	–

*Date over this length not available.

Lake Huron,
NC2 (Spanish River)

Mercury and PCB concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Yellow Perch	–	–	A	A	B	–	–	–	–	–
	Yellow Perch up to 12" contained levels of PCB* below the Federal Guideline.									
Pike	–	–	–	–	A	A	A	A	A	–
	Northern Pike up to 27" contained levels of PCB* below the Federal Guideline.									
White Sucker	–	–	–	A	A	A	A	–	–	–
	White Sucker up to 22" contained levels of PCB* below the Federal Guideline.									
Walleye	–	–	–	A	A	A	B	B	–	–

*Data over this length not available.

Lake Joseph,
4510/7944, Medora Twp.,
Muskoka District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Whitefish	–	–	–	–	–	–	A	A	A	B
Lake Trout	–	–	–	–	–	A	A	B	B	–
Smallmouth Bass	–	–	–	–	–	B	C	–	–	–

Jowsey Lake,
4629/8237, Algoma District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Yellow Perch	A	A	A	A	A	–	–	–	–	–
Walleye	–	–	–	–	A	B	B	C	–	–
Pike	–	–	–	–	A	A	A	–	–	–

Kaginu Lake,
4906/8547, Gertrude Twp.,
Thunder Bay District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	A	A	A	A	A	–
Yellow Perch	A	A	A	–	–	–	–	–	–	–
White Sucker	–	A	A	A	A	A	–	–	–	–

Kamiskotia Lake,
4834/8138, Cochrane District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	–	A	A	A	–	–
Walleye	–	–	–	–	A	B	B	–	–	–

Kawinogans River,
5139/8955, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	A	A	–	–	–	–
Redhorse Sucker	–	–	A	A	A	A	B	–	–	–
White Sucker	–	–	–	A	A	A	–	–	–	–

Keenoa Lake,
4859/8228, Fenton Twp.,
Cochrane District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	–	A	A	B	–	–
Walleye	–	–	–	–	A	B	C	D	–	–

Kenogami Lake,
4806/8014, Grenfell & Eby Tps.,
Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	A	B	B	–	–	–
Pike	–	–	–	A	A	A	B	–	–	–

Kenogaming Lake,
4805/8155, Regan Twp.,
Sudbury District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Whitefish	–	–	–	A	A	A	–	–	–	–
Pike	–	–	–	–	A	A	A	A	B	–
White Sucker	–	A	A	A	A	A	A	–	–	–
Walleye	–	–	–	A	A	B	C	D	D	–

Kenogamissi Lake,
4815/8133, Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	B	B	C	C	C	–	–
Pike	–	–	–	–	–	–	B	B	–	–

Kernick Lake,
4537/7921, Armour Twp.,
Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Smallmouth Bass	–	A	A	A	A	–	–	–	–	–
Yellow Perch	–	A	A	B	B	–	–	–	–	–

Kerr Lake,
4502/7623, Lanark Twp.,
Lanark County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Brown Bullhead	A	A	A	A	–	–	–	–	–	–
Smallmouth Bass	A	A	A	A	A	B	–	–	–	–
White Sucker	A	A	A	A	A	A	A	–	–	–
Yellow Perch	A	A	A	A	–	–	–	–	–	–

Keys Lake,
5002/9401, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Whitefish	–	–	A	A	A	A	A	A	–	–
White Sucker	–	A	A	A	A	A	A	–	–	–
Ling	–	–	–	A	A	B	B	–	–	–
Lake Trout	–	–	–	–	A	A	B	B	B	–
Cisco	–	–	A	A	A	–	–	–	–	–

Kioshkowki Lake,
4605/7853, Pentland Twp.,
Nipissing District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Whitefish	–	–	–	–	A	B	–	–	–	–

Koshlong Lake,
4458/7829, Glamorgan Twp.,
Haliburton County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	–	–	A	A	B	C	D	D
Smelt	A	A	–	–	–	–	–	–	–	–

Lacloche Lake,
4610/8204, Harrow Twp.,
Sudbury District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	B	B	C	C	D	–
Pike	–	–	–	A	A	A	B	B	C	D

Lake of Bays,
4515/7904, Muskoka District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	–	–	–	–	C	C	C	D

Lake Lamuir,
4550/7835, Bishop Twp.,
Nipissing District

Mercury, PCB and mirex concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	A	A	A	A	A	B	C	D

Lake Trout up to 28" contained levels of PCB and mirex* below the Federal Guidelines.

*Data not available over this length.

Larder Lake,
4805/7938, McGarry Twp.,
Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	–	A	A	A	A	A	B	B
Whitefish	–	–	–	A	A	A	A	–	–	–
Pike	–	–	–	A	A	A	A	B	B	–

Little French River,
4556/8054, Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	–	A	A	–	–	–
Smallmouth Bass	–	A	A	–	–	–	–	–	–	–
Rock Bass	–	A	A	–	–	–	–	–	–	–

Little Manitouwadge Lake,
4908/8548, Gertrude Twp.,
Thunder Bay District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Yellow Perch	A	A	A	A	A	–	–	–	–	–
Walleye	–	–	–	A	A	A	A	B	B	–
White Sucker	–	A	A	A	A	A	A	–	–	–

Little Mose Lake,
4908/8546, Gemmel Twp.,
Thunder Bay District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
White Sucker	–	A	A	A	A	A	A	–	–	–
Walleye	–	–	–	A	A	A	A	A	A	B

Lake Louisa,
4528/7829, Lawrence Twp.,
Haliburton County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	–	A	A	A	B	–	–	–

Manitou Lake,
4545/8200, Sandfield Twp.,
Manitoulin Islands

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	A	A	A	A	A	A	A	A

Marshalok Lake,
5022/9335, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Whitefish	–	–	–	–	A	A	A	A	–	–
Cisco	–	–	A	A	A	A	–	–	–	–

Mattagami Lake,
4754/8135, Sudbury District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	B	B	B	C	D	D	–	–
Pike	–	–	A	A	B	B	C	D	D	D
Whitefish	–	–	A	A	A	A	B	–	–	–

Mattagami River,
4845/8132, Reid Twp.,
Cochrane District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	A	A	A	A	B	B	B	–
Pike	–	–	–	–	A	A	A	B	B	C
Yellow Perch	–	–	A	A	A	A	–	–	–	–

Maynard Lake,
5022/9354, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Whitefish	–	–	A	A	A	A	A	–	–	–
Pike	–	–	–	–	A	A	B	B	C	D
Walleye	–	–	–	A	A	B	B	–	–	–
White Sucker	–	A	A	A	A	A	–	–	–	–
Sauger	–	–	A	B	C	D	–	–	–	–
Ling	–	–	–	A	A	A	A	B	B	C

McCarthy Lake,
4619/8228, Proctor Twp.,
Algoma District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	–	–	B	C	D	D	D

Meandering Lake,
5007/9355, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	–	B	B	C	C	C
Walleye	–	–	–	–	–	B	C	D	D	–
White Sucker	–	–	–	–	A	A	B	–	–	–

Memesagamesing Lake,
4600/8000, Hardy Twp.,
Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	B	C	D	D	D	D
Smallmouth Bass	–	A	B	B	C	C	–	–	–	–
Pike	–	–	–	–	–	–	C	D	D	D
White Sucker	–	–	–	A	A	A	–	–	–	–
Lake Trout	–	–	–	–	–	B	C	D	D	D

Mesomikenda Lake,
4740/8183, Chester Twp.,
Sudbury District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	A	A	B	C	D	D	D	–
Pike	–	–	–	–	–	A	B	–	–	–
White Sucker	–	–	–	A	A	A	–	–	–	–

Mindemoya Lake,
4545/8213, Carnarvon Twp.

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Yellow Perch	A	A	A	A	A	–	–	–	–	–
Walleye	–	–	–	A	A	A	A	A	–	–

Minisinakwa Lake,
4739/8144, Noble Twp.,
Sudbury District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Cisco	A	A	A	A	A	–	–	–	–	–
White Sucker	–	A	A	A	A	A	A	–	–	–
Pike	–	–	–	A	A	B	B	C	–	–
Walleye	–	–	–	B	B	C	D	D	D	–

Minnow Lake,
4629/8057, McKim Twp.,
Sudbury District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
White Sucker	A	A	A	A	–	–	–	–	–	–
Yellow Perch	A	A	–	–	–	–	–	–	–	–

Mississagi River,
4610/8301, Algoma District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	A	A	–	–	–	–

Mississippi River,
4526/7616, Carleton County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Smallmouth Bass	A	A	B	B	B	–	–	–	–	
Walleye	–	–	–	A	B	B	C	C	D	D
Redhorse Sucker	–	–	A	A	A	B	B	C	D	D
Pike	–	–	–	A	A	A	–	–	–	–
Eel	–	–	–	–	–	–	A	A	A	–
White Sucker	–	–	A	A	A	A	B	–	–	–
Yellow Perch	A	A	A	–	–	–	–	–	–	–

Moira Lake,
4430/7727, Huntingdon Twp.,
Hastings County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	B	C	D	D	D	D	D
Smallmouth Bass	–	B	B	C	C	–	–	–	–	–
Pike	–	–	–	–	–	B	B	C	–	–

Moose River,
5120/8024, Cochrane District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Cisco	A	A	A	A	A	–	–	–	–	–

Mose Lake,
4909/8545, Gemmell Twp.,
Thunder Bay District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
White Sucker	–	A	A	A	A	A	A	–	–	–
Walleye	–	–	A	A	A	A	A	B	–	–

Mud Lake,
4601/8000, I.R. 9,
Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	B	B	B	C	D	D	D

Lake Muskoka,
4500/7925, Muskoka Twp.,
Muskoka District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	–	–	–	–	D	D	D	D
Rock Bass	–	B	C	–	–	–	–	–	–	–

Nabakwasi Lake,
4733/8127, Miramachi Twp.,
Sudbury District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	A	B	B	C	–	–
White Sucker	–	–	–	A	A	A	A	–	–	–
Pike	–	–	–	–	–	A	B	–	–	–

Nepahwin Lake,
4627/8058, McKim Twp.,
Sudbury District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Yellow Perch	A	A	–	–	–	–	–	–	–	–

Nighthawk Lake,
4828/8058, E. of Timmins,
Cochrane District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Mooneye	–	–	–	–	A	B	–	–	–	–

Lake Nipissing,
4617/8000, Nipissing District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
White Bass	–	–	–	A	B	–	–	–	–	–
Yellow Perch	–	A	A	A	B	–	–	–	–	–
Pike	–	–	–	A	A	A	A	B	–	–
Walleye	–	–	–	A	A	B	B	–	–	–
Brown Bullhead	–	–	A	A	A	–	–	–	–	–
Smallmouth Bass	–	–	A	A	A	A	B	–	–	–

Statistical Districts of Lake Ontario and the St. Lawrence River

Lake Ontario, # 1 (Credit River)

Mercury and PCB concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Coho	–	–	–	–	–	–	A	A	A	A
Coho Salmon over 20" contained levels of PCB** above the Federal Guideline.										

**Data not available under this length.

Lake Ontario, # 1 (Toronto Islands)

Mercury, PCB and mirex concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
White Perch	A	A	A	B	B	–	–	–	–	–
White Perch up to 12" contained levels of PCB and mirex* below the Federal Guidelines.										
White Sucker	–	–	A	A	A	A	B	–	–	–
White Suckers up to 22" contained levels of PCB and mirex* below the Federal Guidelines.										
Alewives	A	A	–	–	–	–	–	–	–	–
Alewives up to 6" contained levels of PCB and mirex* below the Federal Guidelines.										
Brown Bullhead	A	A	A	A	–	–	–	–	–	–
Brown Bullhead up to 12 " contained levels of PCB and mirex* below the Federal Guidelines.										
Gizzard Shad	A	A	A	A	A	A	–	–	–	–
Gizzard Shad up to 16" contained levels of PCB and mirex* below the Federal Guidelines.										
Pike	–	–	–	A	A	A	A	B	B	–
Pike up to 28" contained levels of PCB and mirex* below the Federal Guidelines.										
Yellow Perch	–	A	A	A	–	–	–	–	–	–
Yellow Perch up to 12" contained levels of PCB and mirex* below the Federal Guidelines.										
Pumpkinseed Pumpkinseed up to 7" contained levels of PCB and mirex below the Federal Guidelines.										
Shiners Emerald and Spottail Shiners contained levels of PCB above the Federal Guideline.										

*Data not available over this length.

Lake Ontario, # 1 (Port Dalhousie)

Mercury, PCB and mirex concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Coho	–	–	–	A	A	A	A	–	–	–
Coho Salmon in excess of 20" contained levels of PCB and mirex* above the Federal Guidelines.										
Smelt	A	A	A	A	–	–	–	–	–	–
Smelt in excess of 8" contained levels of PCB and mirex* above the Federal Guidelines.										
Brown Trout Brown Trout in excess of 18" contained levels of PCB and mirex* above the Federal Guidelines.										

*Data not available over this length.

Lake Ontario,
1 (Humber River to Bluffer's Point)

Mercury, PCB and mirex concentrations in relation to fish lengths

Species	Size range in inches									
	< 6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	> 30
Brown Bullhead	–	A	A	A	B	–	–	–	–	–
Brown Bullhead in excess of 10" contained levels of PCB above the Federal Guideline.										
White Sucker	–	A	A	A	A	A	A	–	–	–
White Sucker in excess of 14" contained levels of PCB above the Federal Guideline.										
White Bass	A	A	A	A	B	–	–	–	–	–
White Bass in excess of 6" contained levels of PCB above the Federal Guideline.										
Yellow Perch	A	A	A	A	B	–	–	–	–	–
Yellow Perch in excess of 8" contained levels of PCB and mirex above the Federal Guidelines.										
Carp	–	A	A	A	B	–	–	–	–	
Carp up to 17" contained levels of PCB and mirex* below the Federal Guidelines.										
Pike	–	–	–	A	A	A	A	–	–	–
Pike in excess of 20" contained levels of PCB and mirex* above the Federal Guidelines.										
Largemouth Bass	–	–	A	A	A	–	–	–	–	–
Largemouth Bass up to 12" contained levels of PCB and mirex below the Federal Guideline.										

*Data not available over this length.

Lake Ontario,
2 (Rouge River, Duffins Creek, Frenchman's Bay)

Mercury, PCB and mirex concentrations in relation to fish lengths

Species	Size range in inches									
	< 6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	> 30
Brown Bullhead	–	A	A	B	C	–	–	–	–	–
Brown Bullhead in excess of 8" contained levels of PCB and mirex** above the Federal Guldelines.										
Yellow Perch	A	A	B	B	–	–	–	–	–	–
Yellow Perch in excess of 8" contained levels of PCB and mirex** above the Federal Guidelines.										
Pike	–	–	–	A	A	A	B	C	C	–
Pike up to 28" contained levels of PCB and mirex* below the Federal Guidelines.										
Carp	–	–	–	A	A	A	B	B	–	–
Carp in excess of 24" contained levels of PCB and mirex** above the Federal Guidelines.										
White Sucker	–	–	A	A	A	A	–	–	–	–
White Sucker in excess of 15" contained levels of PCB** above the Federal Guidelines.										
White Bass	–	–	A	B	C	–	–	–	–	–
White Bass in excess of 6" contained levels of PCB above the Federal Guidelines.										
White Perch	–	A	B	C	C	–	–	–	–	–
White Perch in excess of 8" contained levels of PCB and mirex** above the Federal Guidelines.										
Black Crappie	–	A	A	A	A	A	–	–	–	–
Black Crappie up to 12" contained levels of PCB and mirex* below the Federal Guidelines.										
Gizzard Shad	A	A	A	A	A	A	–	–	–	–

*Data not available over this length.
**Data not available under this length.

Lake Ontario,
4 (Bay of Quinte)

Mercury, PCB and mirex concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Smallmouth Bass	A	A	A	A	B	C	–	–	–	–
Smallmouth Bass in excess of 18" contained levels PCB and mirex above the Federal Guidelines.										
Walleye	–	–	–	–	A	A	B	B	D	D
Walleye up to 30" contained levels of PCB and mirex* below the Federal Guidelines.										
Pike	–	–	–	–	–	–	A	A	B	B
Pike up to 30" contained levels of PCB and mirex* below the Federal Guidelines.										
Largemouth Bass	–	–	A	A	A	B	B	C	–	–
Largemouth Bass up to 24" contained levels of PCB and mirex* below the Federal Guidelines.										
Brown Bullhead Bullhead up to 24" contained levels of PCB and mirex* below the Federal Guidelines.										
White Perch	A	A	A	–	–	–	–	–	–	–
White Perch up to 10" contained levels of PCB and mirex* below the Federal Guidelines.										
White Bass	A	A	A	A	–	–	–	–	–	–
White Bass up to 11" contained levels of PCB and mirex* below the Federal Guidelines.										
Eel	–	–	–	–	–	–	A	A	A	A
Eel in excess of 26" contained levels of PCB and mirex above the Federal Guidelines.										
Carp Carp up to 17" contained levels of PCB and mirex* below the Federal Guidelines.										
Channel Catfish	–	–	A	A	A	A	B	D	–	–

*Data not available over this length.

Lake Ontario,
5 (St. Lawrence River)

Mercury, PCB and mirex concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Yellow Perch	A	A	A	A	A	B	–	–	–	–
Perch up to 18" contained levels of mirex and PCB* below the Federal Guidelines.										
Brown Bullhead	–	A	A	A	A	A	–	–	–	–
Bullhead up to 15" contained levels of mirex and PCB* below the Federal Guidelines.										
Pike	–	–	–	A	A	A	B	B	B	C
Pike up to 35" contained levels of mirex and PCB* below the Federal Guidelines.										
White Sucker	A	A	B	B	B	B	B	–	–	–
White Sucker up to 19" contained levels of mirex and PCB* below the Federal Guidelines.										
Pumpkinseed	A	A	A	–	–	–	–	–	–	–
Pumpkinseed up to 18" contained levels of mirex and PCB* below the Federal Guidelines.										
Largemouth Bass	–	A	A	A	B	B	–	–	–	–
Largemouth Bass up to 16" contained levels of mirex and PCB* below the Federal Guidelines.										
Smallmouth Bass	–	–	–	–	B	C	–	–	–	–
White Perch	A	A								
White Perch over 8" contained levels of mirex and PCB above the Federal Guidelines.										

*Data not available over this length.

Opasatika Lake,
4904/8306, Opasatika Twp.,
Algoma District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	B	B	B	C	–	–	–
Pike	–	–	–	–	B	B	C	C	C	–

Papakomeka Lake,
4816/8118, Adams Twp.,
Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	–	A	B	B	C	D

Paudash Lake,
4458/7803, Cardiff Twp.,
Haliburton County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	A	A	B	C	–	–

Pharand Lake,
4807/8148, Pharand Twp.,
Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	–	A	A	B	–	–

Pickle Lake,
5128/9015, Ponsford Twp.,
Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	–	A	A	B	–	–
White Sucker	–	–	–	A	A	–	–	–	–	–

Ponsford Lake,
5130/9020, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
White Sucker	–	–	–	A	A	A	A	–	–	–
Pike	–	–	–	A	A	A	A	–	–	–

Porcupine Lake,
4829/8111, Whitney Twp.,
Cochrane District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	A	A	A	B	B	B
White Sucker	–	–	–	A	A	A	A	–	–	–

Pratt Lake,
4857/8230, Seaton Twp.,
Cochrane District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	A	A	A	B	–	–
Pike	–	–	–	A	A	A	A	A	B	B

Ramsey Lake,
4629/8057, McKim Twp.,
Sudbury District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	A	A	A	A	A	–
Yellow Perch	A	A	A	–	–	–	–	–	–	–

Red Cedar Lake,
4645/7954, McCallum Twp.,
Nipissing District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	B	B	C	D	D	D
Cisco	–	A	A	A	A	B	–	–	–	–
Ling	–	–	–	–	B	B	B	–	–	–

Restoule Lake,
4603/7946, Patterson Twp.,
Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	C	C	D	D	–	–	–
Whitefish	–	–	–	–	A	B	B	–	–	–

Rideau River,
4527/7542, Carleton County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	A	B	B	C	C	D
Pike	–	–	–	A	A	A	B	B	B	–
Smallmouth Bass	A	A	A	B	B	B	C	–	–	–
Muskie	–	–	–	–	–	–	A	A	A	–
Black Crappie	A	A	A	B	–	–	–	–	–	–
Brown Bullhead	–	–	A	A	A	–	–	–	–	–

Robin Lake,
4603/7958, I.R. 9,
Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Largemouth Bass	–	–	A	B	B	D	D	D	–	–

Roughrock Lake,
5006/9446, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	–	A	B	B	C	D
White Sucker	–	–	–	–	A	A	C	–	–	–
Walleye	–	–	–	A	A	B	C	D	D	–
Cisco	A	A	A	A	A	A	–	–	–	–
Yellow Perch	–	A	A	B	B	–	–	–	–	–
Smallmouth Bass	–	–	–	A	B	B	–	–	–	–

Round Lake,
4801/8002, Otto Twp.,
Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	–	–	B	B	C	C	–

Routine Lake,
5025/9458 (Kenora District)

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	A	A	B	B	B	C	C	D	–
Smallmouth Bass	–	–	–	A	B	C	D	–	–	–
Pike	–	–	–	–	A	A	B	B	C	D
Cisco	–	–	A	A	A	–	–	–	–	–

Lake St. Clair,
4228/8240, Essex and Kent Counties

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	A	B	C	D	D	D
White Bass	–	A	B	B	B	C	D	D	–	–
Channel Catfish	–	A	A	B	B	B	B	B	B	–
Rock Bass	B	B	D	D	D	D	–	–	–	–
Smallmouth Bass	–	A	B	B	C	D	D	–	–	–
Yellow Perch	–	B	C	D	D	D	–	–	–	–
Pike	–	–	–	–	–	B	C	C	D	D
Carp	–	–	–	A	B	B	B	B	B	C
White Sucker	–	–	–	–	A	B	D	D	D	–
Black Crappie	–	A	B	C	D	–	–	–	–	–
Largemouth Bass	–	B	C	D	D	D	D	–	–	–
Bluegill	A	B	C	–	–	–	–	–	–	–
Pumpkinseed	A	B	C	–	–	–	–	–	–	–

Lake St. Joseph,
5105/9035, Thunder Bay District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
White Sucker	–	–	–	A	A	A	A	–	–	–
Walleye	–	–	–	A	A	A	B	–	–	–
Pike	–	–	–	A	A	A	A	B	–	–

Lake St. Peter,
4519/7802, McClure Twp.,
Hastings County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	–	A	A	A	B	B	C	D

Sand Lake,
5005/9439, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	A	A	A	B	B	C
White Sucker	–	–	A	A	A	A	A	–	–	–
Yellow Perch	A	A	A	B	B	–	–	–	–	–
Walleye	–	–	–	A	A	B	B	C	–	–
Ling	–	–	–	–	–	A	A	–	–	–
Sauger	–	–	B	C	D	–	–	–	–	–
Smallmouth Bass	–	–	A	B	B	–	–	–	–	–

Sandy Lake (1st),
4607/8002, I.R. 9,
Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	A	A	B	C	–	–

Sandy Lake (2nd),
4607/8002, I.R. 9,
Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	A	A	B	B	–	–
Yellow Perch	–	A	A	A	–	–	–	–	–	–

Sasaginaga Lake,
4724/7942, Coleman Twp.,
Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	A	A	B	B	–	–	–
Lake Trout	–	–	–	A	A	A	A	A	–	–
Cisco	–	–	–	A	A	A	–	–	–	–

Separation Lake,
5014/9424, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Redhorse Sucker	–	–	–	–	B	C	D	D	D	–
Pike	–	–	–	–	B	D	D	D	D	D
Mooneye	–	A	A	B	C	D	–	–	–	–
Walleye	–	–	–	C	D	D	D	D	D	–
Whitefish	–	–	A	A	A	B	B	–	–	–
Cisco	A	A	A	A	A	B	–	–	–	–
Sauger	–	C	D	D	D	D	–	–	–	–
White Sucker	–	–	–	A	B	B	–	–	–	–
Ling	–	–	–	–	B	B	C	–	–	–
Yellow Perch	–	C	D	–	–	–	–	–	–	–

Sesekinika Lake,
4811/8014, Maisonville Twp.,
Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	A	A	A	–	–	–
Pike	–	–	–	A	A	A	A	A	–	–

Shack Lake,
4857/8231, Seaton Twp.,
Cochrane District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	–	A	B	C	D	D	–
Pike	–	–	–	–	A	A	A	A	B	B

Lake Simcoe,
4425/7920, Simcoe & York Counties

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Largemouth Bass	–	A	A	A	A	A	B	–	–	–
Smallmouth Bass	–	A	A	A	A	A	B	–	–	–
Yellow Perch	A	A	A	A	A	–	–	–	–	–
Pike	–	–	–	A	A	A	A	A	A	A
Walleye	–	–	–	A	A	A	B	B	C	D
Lake Trout	–	–	–	–	A	A	A	A	A	B
White Sucker	–	–	–	–	A	A	A	–	–	–
Whitefish	–	–	–	A	A	A	A	–	–	–
Rock Bass	–	A	A	A	A	–	–	–	–	–
Ling	–	–	–	–	–	–	–	A	B	B

Skeleton Lake,
4752/7939, Mulligan Twp.,
Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	B	B	B	C	C	–	–
Pike	–	–	–	–	–	C	C	–	–	–

Snigisi Lake,
4603/7959, I.R. 9,
Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	A	A	A	B	B	C	–
Largemouth Bass	–	–	–	A	A	B	–	–	–	–

Snook Lake,
5012/9441, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	A	A	B	B	C	C
Lake Trout	–	–	–	A	A	B	B	B	C	C
Cisco	–	A	B	–	–	–	–	–	–	–
White Sucker	–	–	A	A	A	A	A	B	–	–

Snowshoe Lake,
5034/9507, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	B	B	B	C	C	–	–
Pike	–	–	–	–	A	B	B	B	C	C
Ling	–	–	–	–	–	A	A	B	B	B
White Sucker	–	–	–	A	A	A	A	–	–	–
Cisco	–	–	A	A	A	–	–	–	–	–
Whitefish	–	–	–	A	A	A	A	–	–	–

Stoco Lake,
4428/7717, Hungerford Twp.,
Hastings County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	B	B	B	B	B	C	–
Pike	–	–	–	A	A	A	A	B	B	B
Smallmouth Bass	–	–	B	B	–	–	–	–	–	–

Stony Lake,
4433/7806, Dummer Twp.,
Peterborough County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	A	A	A	B	C	–	–	–
Ling	–	–	A	A	A	A	B	B	C	–
Cisco	–	–	–	A	A	A	B	–	–	–

Sup Lake,
5017/9333, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Whitefish	–	A	A	A	A	A	A	A	–	–
Walleye	–	–	–	A	A	A	B	B	C	–

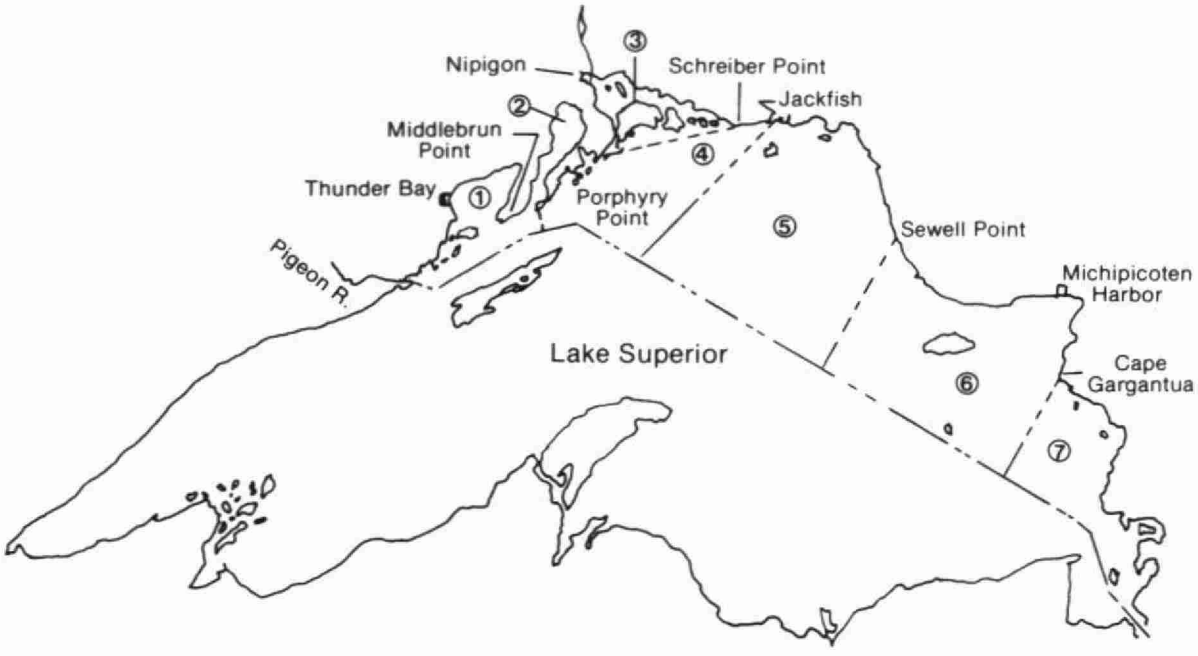
Lake Superior #1,
(Thunder Bay, Wild Goose Bay)

Mercury and PCB concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	–	A	A	A	B	B	B	–
	Lake Trout up to 23" contained levels of PCB* below the Federal Guideline.									
Whitefish	–	–	–	A	A	A	A	–	–	–
	Whitefish up to 19" contained levels of PCB* below the Federal Guideline.									
Cisco	–	–	A	A	A	A	–	–	–	–
	Cisco up to 14" contained levels of PCB* below the Federal Guideline.									
Rainbow Trout	Rainbow Trout up to 26" contained levels of PCB* below the Federal Guideline.									

*Data not available over this length.

Statistical Districts of Lake Superior



Lake Superior #1,
(Pine Bay)

Mercury and PCB concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Whitefish	–	–	–	A	A	A	A	B	–	–
	Whitefish up to 23" contained levels of PCB* below the Federal Guideline.									
Lake Trout	–	–	–	A	A	A	A	–	–	–
	Lake Trout up to 19" contained levels of PCB* below the Federal Guideline.									
Walleye	–	–	–	A	A	B	C	–	–	–
	Walleye up to 18" contained levels of PCB* below the Federal Guideline.									

*Data not available over this length.

Lake Superior #2,
(Black Bay)

Mercury and PCB concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Whitefish	–	–	–	A	A	A	A	–	–	–
	Whitefish up to 30" contained levels of PCB* below the Federal Guideline.									
Cisco	–	–	A	A	A	A	–	–	–	–
	Cisco up to 22" contained levels of PCB* below the Federal Guideline.									
Lake Trout	–	–	–	A	A	A	B	B	B	–
	Lake Trout up to 35" contained levels of PCB* below the Federal Guideline.									

*Data not available over this length.

Lake Superior #3,
(Nipigon Bay)

Mercury and PCB concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Whitefish	–	–	–	A	A	A	A	–	–	–
	Whitefish up to 22" contained levels of PCB* below the Federal Guideline.									
Lake Trout	–	–	–	A	A	A	A	–	–	–
	Lake Trout up to 26" contained levels of PCB* below the Federal Guideline.									
Cisco	Cisco up to 15" contained levels of PCB* below the Federal Guideline.									
Menominee	–	–	A	A	A	A	–	–	–	–

*Data not available over this length.

Lake Superior #4,
(Moss Island)

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Cisco	A	A	A	A	A	A	–	–	–	–

Lake Superior #5,
(Jackfish Bay)

Mercury and PCB concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	–	A	A	A	B	B	–	–
	Lake Trout up to 18" contained levels of PCB* below the Federal Guideline.									
Whitefish	–	–	–	A	A	A	–	–	–	–
	Whitefish up to 17" contained levels of PCB* below the Federal Guideline.									
Cisco	–	–	A	A	A	A	–	–	–	–
	Cisco up to 18" contained levels of PCB* below the Federal Guideline.									

*Data not available over this length.

Lake Superior #5,
(Peninsula Harbour)

Mercury and PCB concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Whitefish	–	–	–	A	B	D	–	–	–	–
	Whitefish greater than 18" contained levels of PCB** above the Federal Guideline.									
Lake Trout	–	–	–	A	A	A	A	B	B	B
	Lake Trout up to 23" contained levels of PCB* below the Federal Guideline.									
White Sucker	–	A	A	B	B	C	D	–	–	–

*Data not available over this length.
**Data not available under this length.

Lake Superior #6,
(Michipicoten Bay)

Mercury and PCB concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	–	A	A	B	B	–	–	–
	Lake Trout up to 18" contained levels of PCB* below the Federal Guideline.									
Whitefish	–	–	–	A	A	A	A	–	–	–
	Whitefish up to 22" contained levels of PCB* below the Federal Guideline.									
Cisco	–	–	A	A	A	A	–	–	–	–
	Cisco up to 15" contained levels of PCB* below the Federal Guideline.									

*Data not available over this length!

Lake Talon,
4618/7905, Nipissing District

Mercury, PCB and mirex concentrations in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	A	B	D	D	D	–
Walleye up to 26" contained levels of PCB and mirex* below the Federal Guidelines.										
Lake Trout	–	–	–	A	A	A	A	A	B	–
Lake Trout up to 25" contained levels of PCB and mirex* below the Federal Guidelines.										
Ling	–	–	–	–	–	B	B	C	D	–
Ling up to 27" contained levels of PCB and mirex* below the Federal Guidelines.										
Cisco	–	–	A	A	B	B	–	–	–	–
Cisco up to 13" contained levels of PCB and mirex* below the Federal Guidelines.										
Smallmouth Bass	–	–	A	A	B	B	–	–	–	–
Smallmouth Bass up to 12" contained levels of PCB and mirex* below the Federal Guidelines.										
Whitefish	–	–	–	–	A	A	B	–	–	–
Whitefish up to 21" contained levels of PCB and mirex* below the Federal Guidelines.										

*Data not available over this length.

Tay River,
4453/7607, Lanark County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Largemouth Bass	–	–	A	A	B	B	–	–	–	–
Black Crappie	–	–	B	B	C	–	–	–	–	–
Brown Bullhead	–	–	A	A	–	–	–	–	–	–
Redhorse Sucker	–	–	–	–	A	A	–	–	–	–
Pike	–	–	–	–	A	A	B	–	–	–

Lake Temagami,
4700/8005, Nipissing District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Whitefish	–	–	A	A	A	A	A	A	–	–
Walleye	–	–	–	A	A	A	B	–	–	–
Cisco	–	A	A	A	–	–	–	–	–	–
Lake Trout	–	–	–	A	A	A	A	–	–	–
Ling	–	–	–	A	A	A	–	–	–	–
Pike	–	–	–	A	A	A	A	A	A	–
Smallmouth Bass	–	–	A	A	A	–	–	–	–	–

Tetu Lake,
5011/9502, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	B	D	D	D	D	D
Walleye	–	–	–	C	C	D	D	D	D	–
Sauger	–	C	C	D	D	D	–	–	–	–
Cisco	A	A	A	A	A	C	–	–	–	–
Whitefish	–	–	A	A	A	B	–	–	–	–
White Sucker	–	–	–	B	B	C	–	–	–	–

Thames River,
4219/8227, Kent County

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	–	–	B	C	D	D	D

Lake Timiskaming,
4652/7915, Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	–	A	B	B	C	–
Walleye	–	–	–	B	B	C	C	–	–	–
Cisco	–	–	A	A	A	A	–	–	–	–
Sauger	–	–	B	B	C	–	–	–	–	–
Mooneye	–	–	A	A	A	–	–	–	–	–

Tomiko Lake,
4632/7949, Grant Twp.,
Nipissing District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	–	B	C	D	D	–	–
Smallmouth Bass	–	–	–	A	B	C	–	–	–	–
White Sucker	–	–	–	–	A	A	B	–	–	–

Toole Lake,
5022/9332, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Whitefish	–	–	A	A	A	A	A	A	–	–
Walleye	–	–	–	–	–	B	B	B	–	–
White Sucker	–	–	–	–	–	A	A	–	–	–

Toothpick Lake,
5007/9408, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Cisco	A	A	A	A	A	–	–	–	–	–
Pike	–	–	–	–	A	A	B	C	D	D
Walleye	–	–	A	A	A	B	B	C	D	–
White Sucker	–	–	–	–	A	A	A	B	–	–
Ling	–	–	–	–	–	–	–	B	B	–
Smallmouth Bass	–	–	–	–	B	C	–	–	–	–

Trapline Lake,
5030/9457, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Pike	–	–	–	–	A	B	B	C	D	D
Walleye	–	–	A	B	B	C	D	D	–	–
White Sucker	–	–	–	A	A	A	A	–	–	–
Cisco	–	–	A	A	A	–	–	–	–	–

Umfreville Lake,
5018/9445, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
White Sucker	–	–	–	A	A	B	D	D	–	–
Pike	–	–	–	B	B	D	D	D	D	D
Sauger	–	B	C	D	D	D	–	–	–	–
Walleye	–	–	–	C	D	D	D	D	D	D
Whitefish	–	–	–	–	A	B	B	C	–	–
Cisco	A	A	B	–	–	–	–	–	–	–
Ling	–	–	–	B	B	C	D	D	–	–
Smallmouth Bass	–	–	–	–	D	D	D	–	–	–
Yellow Perch	B	D	–	–	–	–	–	–	–	–

Victoria Lake,
4811/7953, Morrisette Twp.,
Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Smallmouth Bass	–	–	A	A	A	A	B	–	–	–
Pike	–	–	–	–	A	B	B	C	–	–

Wabigoon Lake,
4944/9240, Kenora District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	A	A	B	B	C	C
Pike	–	–	–	A	A	A	A	B	B	C
Whitefish	–	–	–	–	A	A	A	–	–	–

Watabeag Lake,
4814/8033, Nordica Twp.,
Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Lake Trout	–	–	–	A	A	A	–	–	–	–

Wendigo Lake,
4752/7943, Bayly Twp.,
Timiskaming District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	A	B	B	D	–	–	–
Pike	–	–	–	–	A	A	A	B	–	–

Woodcock Lake,
4602/8004, I.R. 9,
Parry Sound District

Mercury concentration in relation to fish lengths

Species	Size range in inches									
	<6	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	>30
Walleye	–	–	–	B	B	C	C	D	D	D
Pike	–	–	–	–	B	B	C	C	–	–
Largemouth Bass	–	–	–	B	B	C	–	–	–	–

List of monitored waters by region

Northeastern region

Inland lakes and rivers
Lake Abitibi
Agnew Lake
Amkougami Lake
Aylen Lake
Bennet Lake
Black River
Blueberry Lake
Buck Lake
Caribou Lake
Crosswise Lake
The Dalles
Dollars Lake
Eagle Lake
Eels Lake
Elliot Lake
Emerald Lake
Evangeline Lake
Francklyn Lake
Fraser Lake
Frederick House Lake
French River
Lower French River
Upper French River
Giroux Lake
Gough Lake
Guilfoyle Lake
Hamlock Lake #1
Hamlock Lake #2
Hogan Lake
Jowsey Lake
Kamiskotia Lake
Keenoa Lake
Kenogami Lake
Kenogaming Lake
Kinogamissi Lake
Kernick Lake
Kioshkowki Lake
Lacloche Lake
Lake La Muir
Larder Lake
Little French River
Little Manitouwadge Lake
Manitou Lake
Mattagami Lake
Mattagami River
McCarthy Lake
Memesagamesing Lake
Mesomikenda Lake
Mindemoya Lake
Minisinakwa Lake
Minnow Lake
Mississagi River
Moose River
Mud Lake
Nabakwasi Lake
Nepahwin Lake
Nighthawk Lake
Lake Nipissing
Opasatika Lake
Papakomeka Lake
Pharand Lake
Porcupine Lake
Pratt Lake
Ramsey Lake
Red Cedar Lake
Restoule Lake
Robin Lake
Round Lake
Lake St. Joseph
Sandy Lake #1
Sandy Lake #2
Sasaginaga Lake
Sesekinika Lake
Shack Lake
Skeleton Lake
Snigisi Lake
Lake Talon
Lake Temagami
Lake Timiskaming
Tomiko Lake
Victoria Lake
Watabeag Lake
Wendigo Lake
Woodcock Lake

Northwestern region

Inland lakes and rivers
Agonzon Lake
Badesdawa Lake
Ball Lake
Chase Lake
Clay Lake
Delaney Lake
Eden Lake
Favel Lake
Garden Lake
Gaugino Lake
Gooseneck Lake
Grassy Narrows Lake
Gun Lake
Harris Lake
Howard Lake
Kaginu Lake
Kawinogans River
Keys Lake
Little Mose Lake
Marshalok Lake
Maynard Lake
Meandering Lake
Mose Lake
Pickle Lake
Ponsford Lake
Roughrock Lake
Routine Lake
Sand Lake
Separation Lake
Snook Lake
Snowshoe Lake
Sup Lake
Tetu Lake
Toole Lake
Toothpick Lake
Trapline Lake
Umfreville Lake
Wagiboon Lake

Central region

Inland lakes and rivers
Anstruther Lake
Bow Lake
Cheddar Lake
Crowe Lake
Lake Joseph
Koshlong Lake
Lake of Bays
Lake Louisa
Lake Muskoka
Paudash Lake
Lake Simcoe
Stony Lake

Southeastern region

Inland lakes and rivers
Constance Lake
Kerr Lake
Mississippi River
Moira Lake
Rideau River
Lake St. Peter
Stoco Lake
Tay River

Southwestern region

Inland lakes and rivers
Lake St. Clair
Thames River

Great Lakes

Lake Huron
Douglas Point, Saugeen River
Goderich
Raft Island, Britt, Moon River
Thornbury, Owen Sound
Nottawasaga Bay
Lake George
Serpent River
Spanish River

Lake Ontario
Credit River
Toronto Islands
Humber River to Bluffer's Point
Port Dalhousie
Rouge River
Bay of Quinte
St. Lawrence River

Lake Superior
Thunder Bay
Pine Bay
Black Bay
Nipigon Bay
Jackfish Bay
Peninsula Harbour
Michipicoten Bay
Moss Island

List of monitored waters – alphabetical

Inland lakes and rivers

Lake Abitibi
Agnew Lake
Agonzon Lake
Amkougami Lake
Anstruther Lake
Aylen Lake
Badesdawa Lake
Ball Lake
Bennet Lake
Black River
Blueberry Lake
Bow Lake
Buck Lake
Caribou Lake
Chase Lake
Cheddar Lake
Clay Lake
Constance Lake
Crosswise Lake
Crowe Lake
The Dalles
Delaney Lake
Dollars Lake
Eagle Lake
Eden Lake
Eels Lake
Elliot Lake
Emerald Lake
Evangeline Lake
Favel Lake
Francklyn Lake
Fraser Lake
Frederick House Lake
French River
Lower French River
Upper French River
Garden Lake
Gaugino Lake
Giroux Lake
Gooseneck Lake
Gough Lake
Grassy Narrows Lake
Guilfoyle Lake
Gun Lake
Hamlock Lake #1
Hamlock Lake #2
Harris Lake
Hogan Lake
Howard Lake
Lake Huron
- Douglas Point, Saugeen River
- Goderich
- Lake George
- Nottawasaga Bay
- Raft Island, Britt, Moon River
- Serpent River
- Spanish River
- Thornbury, Owen Sound

Lake Joseph
Jowsey Lake
Kaginu Lake
Kamiskotia Lake
Kawinogans River
Keenoa Lake
Kenogami Lake
Kenogaming Lake
Kenogamissi Lake
Kernick Lake
Kerr Lake
Keys Lake
Kioshkowki Lake
Koshlong Lake
Lacloche Lake
Lake of Bays
Lake La Muir
Larder Lake
Little French River
Little Manitouwadge Lake
Little Mose Lake
Lake Louisa
Manitou Lake
Marshalok Lake
Mattagami Lake
Mattagami River
Maynard Lake
McCarthy Lake
Meandering Lake
Memesagamesing Lake
Mesomikenda Lake
Mindemoya Lake
Minisinakwa Lake
Minnow Lake
Mississagi River
Mississippi River
Moira Lake
Moose River
Mose Lake
Mud Lake
Lake Muskoka
Nabakwasi Lake
Nepahwin Lake
Nighthawk Lake
Lake Nipissing
Lake Ontario
- Bay of Quinte
- Credit River
- Humber River to Bluffer's Point
- Port Dalhousie
- Rouge River
- St. Lawrence River
- Toronto Islands

Opasatika Lake
Papakomeka Lake
Paudash Lake
Pharand Lake
Pickle Lake
Ponsford Lake
Porcupine Lake

Pratt Lake
Ramsey Lake
Red Cedar Lake
Restoule Lake
Rideau River
Robin Lake
Roughrock Lake
Round Lake
Routine Lake
Lake St. Clair
Lake St. Joseph
Lake St. Peter
Sand Lake
Sandy Lake #1
Sandy Lake #2
Sasaginaga Lake
Separation Lake
Sesekinika Lake
Shack Lake
Lake Simcoe
Skeleton Lake
Snigisi Lake
Snook Lake
Snowshoe Lake
Stoco Lake
Stony Lake
Sup Lake
Lake Superior
- Black Bay
- Jackfish Bay
- Moss Island
- Michipicoten Bay
- Nipigon Bay
- Peninsula Harbour
- Pine Bay
- Thunder Bay

Lake Talon
Tay River
Lake Temagami
Tetu Lake
Thames River
Lake Timiskaming
Tomiko Lake
Toole Lake
Toothpick Lake
Trapline Lake
Umfreville Lake
Victoria Lake
Wabigoon Lake
Watabeag Lake
Wendigo Lake
Woodcock Lake

Fish species

Designation	Proper name	Other common names
Sturgeon	*Acipenser fulvescens*	
Bowfin	*Amia calva*	dogfish, lawyer
Alewife	*Alosa pseudoharengus*	
Gizzard Shad	*Dorosoma cepedianum*	gizzard shad
Coho	*Oncorhynchus kisutch*	coho salmon
Chinook	*Oncorhynchus tshawytscha*	chinook salmon
Sockeye	*Oncorhynchus nerka*	sockeye salmon, kokanee salmon
Rainbow	*Salmo gairdneri*	rainbow trout, steelhead
Brown Trout	*Salmo trutta*	
Speckled Trout	*Salvelinus fontinalis*	brook trout
Lake Trout	*Salvelinus namaycush*	siscowet
Splake		
Whitefish	*Coregonus clupeaformis*	
Cisco	*Coregonus artedii*	lake herring, tullibee
Menominee	*Prosopium cylindraceum*	round whitefish, round fish
Smelt	*Osmerus mordax*	rainbow smelt, American smelt
Pike	*Esox lucius*	northern pike
Muskie	*Esox masquinongy*	maskinonge, muskellunge
Goldeye	*Hiodon alosoides*	
Mooneye	*Hiodon tergisus*	
Quillback Carpsucker	*Carpiocles cyprinus*	quillback sucker
Longnose Sucker	*Catostomus*	catostomus
White Sucker	*Catostomus commersoni*	
Redhorse Sucker	*Moxostoma macrolepidotum*	shorthead redhorse
Carp	*Cyprinus carpio*	
Golden Shiner	*Notemigonus crysoleucas*	
Emerald Shiner	*Notropis atherinoides*	
Spottail Shiner	*Notropis hudsonius*	
Yellow Bullhead	*Ictalurus natalis*	
Brown Bullhead	*Ictalurus nebulosus*	
Channel Catfish	*Ictalurus punctatus*	
Eel	*Anguilla rostrata*	American eel
Ling	*Lota lota*	burbot, lawyer, eelpout, maria
White Perch	*Morone americana*	
White Bass	*Morone chrysops*	
Rock Bass	*Ambloplites rupestris*	
Pumpkinseed	*Lepomis gibbosus*	
Bluegill	*Lepomis macrochirus*	
Smallmouth Bass	*Micropterus dolomieui*	black bass
Largemouth Bass	*Micropterus salmoides*	
White Crappie	*Pomoxis annularis*	
Black Crappie	*Pomoxis nigromaculatus*	
Yellow Perch	*Perca flavescens*	
Sauger	*Stizostideon canadense*	
Walleye	*Stizostideon vitreum*	pickerel, yellow pickerel, yellow walleye
Brook Silversides	*Labidesthes sicculus*	
Freshwater Drum	*Aplodinotus grunniens*	

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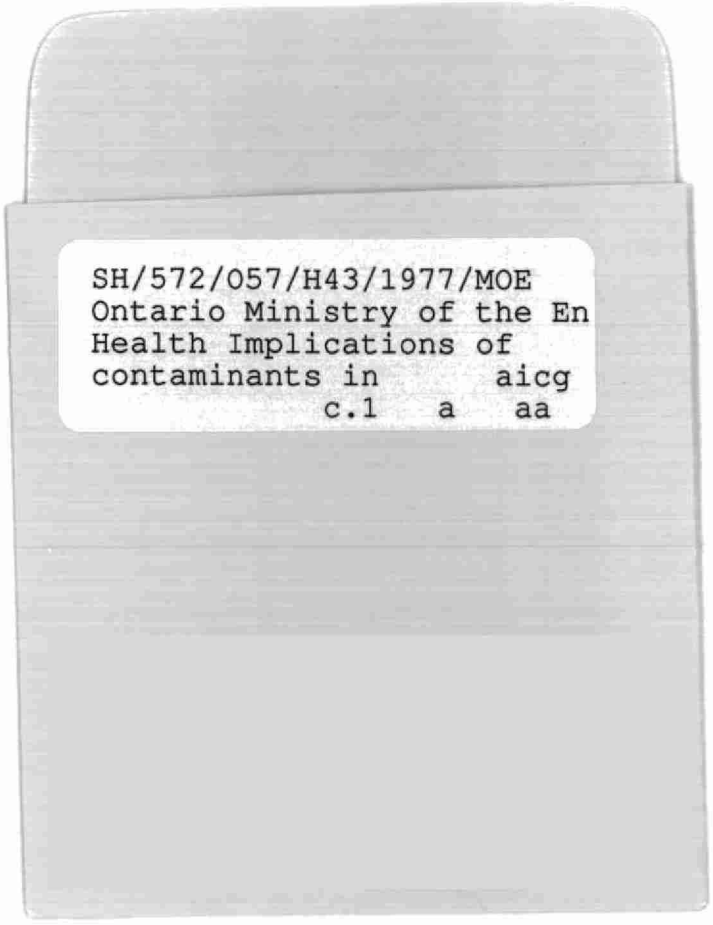

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